# TOSHIBA TEC GROUP Environmental Report 2003





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## Features in the Environmental Report 2003

• In the "Manufacturing" section, close-ups on the activities in the production sites and subsidiary production companies are provided. Pages 7 to 10 are in gatefold configuration, in order to fully depict environmental impacts from manufacturing to use by the customers.

# **Subject Period**

- The results of the activities made between April 1, 2002 to March 31, 2003 are covered. The values described in the TOSHIBA TEC GROUP Environmental Report 2002 are used when no change has been made as of April 1, 2002.
- \* Items worthy of mention, which were identified by May 20, 2003, are described.

# **Editorial Policy**

The time of issue has been changed to the end of August, starting with this issue.

- The report continues to focus on environmental protection activities in manufacturing, using and recycling the products. TOSHIBA TEC GROUP Environmental Report 2003 is comprised of the policy, the group overview, the environmental management and activities to provide environmentally conscious products.
- In the "manufacturing" section, this report provides closeups on environmental activities conducted at the production sites and subsidiary production companies.
- Many graphs and charts are used to easily understand the targets, plans and achievements.
- This report complies with the Environmental Reporting Guideline (Fiscal Year 2000 Version) published by the Ministry of the Environment.
- This report explains how we have been moving forward with our voluntary environmental plan (the third voluntary environmental plan), environmental accounting and environmental audit (EASTER), based on Toshiba Corporation's criteria, as a member of the Toshiba Group.
- The contents of this report can be viewed on our website.

# **Scope of this Report**

- TOSHIBA TEC Group
  - TOSHIBA TEC CORPORATION Retail Information Systems Company Document Processing & Telecommunication Systems Company Home Electric Appliances Group
    - Component Business Group
  - Domestic subsidiary companies (production) FUJIKEN CO., LTD., TOSEI DENKI CO., LTD., TEC KASHIYA DENKI CO., LTD., TEC PRECISION, INC., and TEC MRC CO., LTD.
  - Domestic subsidiary companies (sales or service) TEC SHOJI CO., LTD. and TEC ENGINEERING CO., LTD.
  - Domestic subsidiary companies (software) TEC IFORMATION SYSTEMS CORPORATION and TOSHIBA TEC DOCUMENT PROCESSING SYSTEMS CO., LTD.
  - Domestic subsidiary companies (other)
     T. T. BUSINESS SERVICE CO., LTD.
  - Overseas subsidiary companies (production) Data regarding environmental accounting and environmental impacts were collected from: TEC SINGAPORE ELECTRONICS PTE. LTD. (TSE), TIM ELECTRONICS SDN. BHD. (TIM), P.T. TEC INDONESIA (TIE), TOSHIBA COPYING MACHINE (Shenzhen) CO., LTD. (TCOS) and TOSHIBA TEC EUROPE IMAGING SYSTEMS S.A. (TEIS)
  - Overseas subsidiary companies (sales or service) Data regarding products were collected from: TOSHIBA TEC GERMANY IMAGING SYSTEMS GmbH and TOSHIBA AMERICA BUSINESS SOLUTIONS, INC. (TABS)

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The TOSHIBA TEC Group aims to be a global entity. We recognize handing over of this irreplaceable Earth to the next generation, in a complete state, is the basic responsibility of mankind. Therefore, we regard environmental protection as the most important task for the management of our company.

As companies are being asked more and more to conduct environmental activities, the TOSHIBA TEC Group is committed to contributing to the establishment of a sustainable society, by implementing "environmental management" which reconciles the "environment" with "economy" and "society."

The Environmental Report 2003 focuses on the environmental protection activities by each business site and our commitment to each product. The report is generally divided into three parts; "manufacturing," "use" and "recycling," along the products' life cycle.

This report also outlines our activities on effective use of resources, prevention of global warming, enhancement of controlling chemical substances, development of environmentally conscious products, and recycling of end-of-use products. For expanding the development of environmentally conscious products, we established our voluntary environmental criteria for our products, which prescribed environmental consideration requirements for each product.

We will move forward with reducing environmental impacts not only at production sites, but also at the non-production sites and in logistics. We trust you will understand how committed we are to improving the environment and making it a healthier place for us all to live. We welcome your comments and suggestions.

> Yoshihiro Maeda President and Chief Executive Officer August 2003

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# **TOSHIBA TEC Group Policy**

TOSHIBA TEC CORPORATION and the TOSHIBA TEC Group companies have been surging forward with environmental protection activities based on the Toshiba Group's slogan -"Committed to People. Committed to the Future" and the TOSHIBA TEC Group's Philosophy and Principles - "Undertaking efforts for a better environment." As a corporate employing the concept of the "environmental management," the TOSHIBA TEC Group is expanding activities on effective use of resources, prevention of global warming, enhancement of controlling chemical substances, development of environmentally conscious products, and recycling end-of-use products. The TOSHIBA TEC Group is striving to reduce environmental impacts on a global basis, aiming at establishing a sustainable society.

#### **Basic Philosophy for Environmental Protection**

We, the TOSHIBA TEC Group companies, based on the recognition that the basic obligation of existing human beings is to hand down to our next generation, our irreplaceable Earth in a sound state. Therefore, we are determined to act according to the TOSHIBA TEC Group s management philosophy and policy.

For the business activities, products and services that have a great impact on the environment, we set objectives and targets, in every phase of the group, to the extent that is technically and economically possible, in order to continually improve the environmental management system.

#### **Basic Policy for Environmental Protection**

- TOSHIBA TEC Group considers environmental protection to be one of management s primary responsibilities.
   TOSHIBA TEC Group specifies objectives and targets for its business activities, products and services to reduce environmental
- (2) IOSTIDA ID, Oroup spectrues objectives and targets for its ousness activities, products and services to reduce environmental impacts and prevent pollution.
- (3) TOSHIBA TEC Group continually strives to improve the environment through vigorous implementation of environmental measures.
- (4) TOSHIBA TEC Group complies not only with laws and regulations, and industry guidelines, which it has endorsed, but also its own standards for environmental protection.
- (5) TOSHIBA TEC Group contributes to society through its environmental protection activities, which include the development and supply of excellent, environmentally conscious technologies and products in cooperation with the local community.
- (6) TOSHIBA TEC Group recognizes that natural resources are finite, and committed to reducing, reasing and recycling in each phase of production covering use of materials, manufacturing, distribution, consumption, collection, and recycling and reusing.
- (7) TOSHIBA TEC Group educates all its employees to enhance their consciousness of the environmen
- (8) TOSHIBA TEC Group instructs and supports subsidiary companies to advance environmental activities throughout the TOSHIBA TEC Group.
- (9) TOSHIBA TEC Group notifies those inside and outside of the group, of implementations of the environmental protection activities as needed.

TOSHIBA TEC Group Established in April 1995 Revised in September 2001

## Concept behind TOSHIBA TEC Group's Environmental Management

#### (1) Goals

- Contributing to the establishment of a "sustainable society."
- Implementing the environmental management, which reconciles environment with economy and society.
- Expanding the environmental management to the domestic and overseas subsidiary companies.

#### (2) TOSHIBA TEC Group's Environmental Management

The TOSHIBA TEC Group implements management, while being strongly aware of the limited resources and providing environmental

## Relationship between TOSHIBA TEC Group's Business Activities and the Environmental Protection



# **Corporate Profile**



Corporate Profile

## The TOSHIBA TEC Group is committed to contributing toward the establishment of a sustainable society through enhancing its environmental protection activities with its latest technologies.

Company name: Paid-in capital: Establishment: Number of employees:

#### Head office:

Retail Information Systems Company: Document Processing & Telecommunication Systems Company: Home Electric Appliances Group: Component Business Group: Core Technology Development Center: Business sites and plant:

TOSHIBA TEC CORPORATION 39.9 billion yen February 21, 1950 Not consolidated: 4,489 (as of April 2003)

1-1 Kanda Nishiki-cho, Chiyoda-ku, Tokyo, 101-8442 Japan Phone: +81-3-3292-6223 3-21-1 Nihonbashi Hama-cho, Chuo-ku, Tokyo 2-4-1 Shibakoen, Minato-ku, Tokyo

1-1 Kanda Nishiki-cho, Chiyoda-ku, Tokyo 80-2 Mifuku, Ohito-cho, Tagata-gun, Shizuoka 6-78 Minami-cho, Mishima-shi, Shizuoka (in Mishima Business Center)

(Business sites/plant)	(Location)	(Products)
Ohito Business Center	Ohito, Ohito-cho, Tagata-gun, Shizuoka	POS systems, electron
Mishima Business Center	Minami-cho, Mishima-shi, Shizuoka	Digital multi-function
		machines, printers, et
Hadano Plant	Horiyama-shita, Hadano-shi, Kanagawa	Vacuum cleaners, hea
Component Business Group	Mifuku, Ohito-cho, Tagata-gun, Shizuoka	Printed circuit boards

Component Business Group

nic registers, electronic scales, etc. n peripherals (MFPs), facsimile alth equipment, etc.

TOSHIBA TEC SOLUTION

Document Solution Provider

**TECHNOLOGY & DEVELOPMENT** 

COMMUNICATION

**USERS & CONSUMERS** 

Lifestyle

Solutions

Total Solution

Provider

Printed circuit boards, stamped parts, lathed parts, etc.

#### **Retail Information Systems**

As the Internet and information technologies advance, the amount of information is remarkably increasing. Considerations for offering products and stores from a customer's point of view, are highly demanded. Quickly and accurately understanding the life cycle needs of individual

customers and improving customer



satisfaction are very important to increase the number of regular customers. TOSHIBA TEC provides high-performance and easy-to-use products, including POS systems essential for effective store management and rationalization, POS terminals adapting to the trend of the times, electronic scales facilitating labor saving and environmental equipment complying with the latest requirements

#### **Document Processing &**

**Telecommunication Systems** With the spread of the Internet, mobile phones and mobile terminals, a large amount of information gathers in offices. Demand to digitize paper documents and retrieve them whenever necessary is increasing.



The networked society has a

significant influence on business style - operating a printer remotely or exchanging information on a real-time basis using a mobile phone. TOSHIBA TEC has configured the original Net-Ready MFP concept to develop the MFP series products in order to assist the customers to solve office problems.

#### Home Electric Appliances

Household electric appliances occupy important positions in modern life. TOSHIBA TEC provides environmental considerations to develop energy-saving, easyto-carry vacuum cleaners, which reduce noise and exhaust, while providing health equipment using air technologies



TOSHIBA TEC carefully listens to the consumers' voice and is committed to offering products full of originality that can satisfy potential customer needs, aiming at supporting a more comfortable living.



- FUJIKEN CO., LTD.
- TOSELDENKLCO., LTD
- TEC KASHIYA DENKI CO., LTD.
- TEC PRECISION, INC.
- TEC MRC CO., LTD.
- ADVANCED SUPPLY MANUFACTURING CORPORATION

#### **Domestic subsidiary companies** (sales/development/software)

- TEC SHOJI CO., LTD. • TEC INFORMATION SYSTEMS
- CORPORATION • TOSHIBA TEC DOCUMENT
- PROCESSING SYSTEMS CO., LTD.

#### Domestic subsidiary companies (service and others)

- TEC ENGINEERING CO., LTD.
- TOSHIBA LOGISTICS SOLUTIONS CO., LTD. T.T. BUSINESS SERVICE CO., LTD.

#### Overseas subsidiary companies (Production and others)

- TOSHIBA TEC EUROPE IMAGING SYSTEMS S.A
- TEC SINGAPORE ELECTRONICS PTE LTD
- TIM ELECTRONICS SDN.BHD.
- P.T. TEC INDONESIA
- TOSHIBA COPYING MACHINE (Shenzhen) CO.,LTD. ● TOSHIBA TEC (H.K.) LOGISTICS & PROCUREMENT LIMITID

#### (Sales)

- TEC AMERICA, INC.
- TEC CANADA INC.
- TEC ELECTRONICA. S.A. de C.V.
- TOSHIBA TEC EUROPE RETAIL INFORMATION SYSTEMS S.A.
- TEC ITALIA, S.r.l.
- TEC POLSKA Sp.z o.o • TEC AUSTRALIA PTY. LTD.
- BEIJING SHANGRONG ELECTRONIC MACHINERY CO., LTD.
- TOSHIBA AMERICA BUSINESS SOLUTIONS, INC.
- TOSHIBA TEC U.K. IMAGING SYSTEMS LTD.
- TOSHIBA TEC GERMANY IMAGING SYSTEMS GmbH • TOSHIBA TEC FRANCE IMAGING SYSTEMS S.A.
- TOSHIBA TEC ITALIA IMAGING SYSTEMS S.P.A
- UNITED O.A. LIMITID
- TAISHIBA INTERNATIONAL CO.,LTD









# **Environmental Protection System**

With aims of enhancing our commitment to the environmental protection throughout the TOSHIBA TEC Group and making it integral to the operation of every TOSHIBA TEC Group company, TOSHIBA TEC set up the Corporate Environmental Protection Committee in 1989 (renamed as Corporate Environmental Protection Council in 1994). Chaired by the Environmental Protection Promoter (director responsible for environmental protection), the council discusses and determines various environmental issues. As its subordinate organizations, the environmental protection conference was set up in each in-house company, division and business site, to advance the corporate activities for environmental protection.



# Environmental policy at each business site

##**#**##.

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Ohito Business Center



1	東之宁ツク株式会社泰野工場環境保全基本方針
	単数工業は、パーナをはころとする家舗電源、精錬機能の生活構成として、環境に 他にたた電話集合構成及び電気制作用製品の提供を通じて、社会に直接することを行 物にます。
1	また、環境協会への取扱みを経営の最重要課題の一つとして使取ったしかけ が次のない地球環境とあ水の里、原料を確全な状態で次出れに引き継いでい くことき、資料工具で認識を受なおたりの活用の数額にたって行動。 21世紀の社会の特徴可能な発展に貢献します。
<b>1</b> 6	事業活動、製品、サービスが環境に与える影響を約回に捉え、技術的、経済的 に可能な範囲で環境目的・目標を定め、定規的に見直すと共に、環境保全活 動のシステムとバフォーマンスの繊維的な向上に、全員で取解みます。
2.	環境保全に関する法令・条例及びグループとして受入れを決めた要求事項及 び当工場独自の自主基準を制定し、遵守します。
a.:	環境調約管製品を提供するため、製品のライフサイクル全体を通しての資源有 激活用、環境費用信息等の可能免益活動にお助わます。 (1) 3月の環境(リケョースペリース・リサイクル) (2) 意志アルギー地 (3) 環境機構的の研測 (4) ジリーン資源の注意 (6) 環境機構成の利用
•	生産資源において、次の事業得ちばかたとき、汚染用止に関始入ます。 ・ 、 単数単数の分割に上級工程のなの目本を認識、含定剤、含定入水す。 ・ 、 事業物の分割に、当工用の事業実施のすべての目前で容認みます。 201 工業及び支援の対象を未認に防止するため、機械・指数からの消息し数 上が期に取扱みます。 201 オジン目を取り用きた。 数に取ります。 201 オジン目を構成でついたなじいのジン、者警察等の活動に含得も多く を物理上間を取り用するからかに(代替技術の採用及び代替物質への起 例)剤はします。
5	社員の環境保全意識を高めるため、全員に対する教育並びに広報活動を行います。
5.	東芝テックグループー体となった環境保全活動を推進するため、関係会社等に 積極的な指導。支援を行なうとともに、地域・社会との協調・進帯を通じて、社会 に貢献します。
	ーニの環境保全基本方針は、一般の人が人平可能としますー
	2003年 4月 1日 東芝テック株式会社委野工場 工場表 二 一 一 10 50
	2 FA C-2(E

# History of TOSHIBA TEC Group's Environmental Protection Activities



# **Voluntary Action Plan and Implementations**



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The target was achieved by the end of fiscal 2002. For details, see page 35.



Environmental impacts involved in business activities contain the INPUT and OUTPUT aspects related to product manufacturing. The INPUT includes the procurement of materials and components and the use of energy such as electricity, water resources, and chemical substances. The OUTPUT includes the emission of gas, water, and waste. In addition, fuel for transporting products and electricity consumed by customers who use the products, are also environmental impacts. \*The data collected from the Ohito Business Center includes the data from the Component Business Group.

**INPUT (Environmental impacts in materials procurement)** 



In the Third Voluntary Environmental Plan TOSHIBA TEC decided upon concrete targets for reducing environmental impacts in manufacturing and use of the products, and have been committed to reaching these goals (see page 6). The advancement of the commitments is described on pages 6 and 11.

**OUTPUT** (Environmental impacts in product manufacturing)



		(Kg)
А	Methyl alcohol	914
В	Phenol	279
С	Antimony and its compounds	170
D	Ethyl acetate	78
Е	Toluene	50
F	Nickel and its compounds	30
G	Lead and its compounds	20
Н	Stylene	0

G

Е

F

н

The environmental impacts in logistics and use by customers are expressed in numbers.

# **OUTPUT (Environmental impacts in logistics)**



\*The range of the representative models has been expanded, compared to the previous year.

# **OUTPUT (Environmental impacts in use by customers)**









Emissions in use \*The range of the representative models has been expanded, compared to the previous year.

	(Kg)
ate of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxy propane	5,000
d its compounds	3,490
compounds	840
zatricyclo [3.3.1.1(3,7)] decane	660
compounds	550
	270
water soluble compound	60
yl) phthalate	10



#### ISO14001 certification at overseas subsidiary companies

To provide the overseas subsidiary companies with the management system similar to the domestic business sites, TOSHIBA TEC intended for the three bases in Southeast Asia to be accredited with ISO. As a result, TEC SINGAPORE ELECTRONICS PTE. LTD. and TIM ELECTRONICS SDN. BHD. (Malaysia) were certified in April 1998. Then, PT TEC INDONESIA was certified in August in the same year.

According to the transfer of the copier business from Toshiba to TOSHIBA TEC in January 1999, the overseas subsidiary companies in Europe, the United State, and China were accredited, in succession.



ISO audit at PT TEC INDONESIA

ISO audit completed at TOSHIBA AMERICA BUSINESS SOLUTIONS, INC.



# **Costs and benefits**

Aggregated: TOSHIBA TEC CORPORATION and 3 domestic subsidiaries and 4 overseas subsidiaries Period: April 1, 2002 - March 31, 2003

Environmental costs Unit: millions of yen									
Classification				Expenditure		Current expenses		Differences from fiscal 2001	
	Classification	Content	Not consolidated	Consolidated	Not consolidated	Consolidated	Not consolidated	Consolidated	
Bu	siness area costs	Reduction of environmental impacts 1)~3)	281.8	296.4	198.9	233.2	142.2	152.2	
8	1) Pollution prevention costs	Atmosphere, water, soil, etc.	25.7	32.1	35.0	44.5	-7.9	-8.0	
nte	2) Global environmental protection costs	Prevention of the greenhouse effect, etc.	115.2	123.4	89.6	93.6	25.2	32.0	
nt	3) Resource circulation costs	Effective utilization of resources, etc.	140.9	140.9	74.3	95.1	124.8	128.2	
Up	stream/downstream costs	Green procurement, recycling, etc.	0.0	0.0	198.2	221.2	71.4	93.5	
Ма	nagement activity costs	Environmental education, etc.	32.5	32.5	239.8	263.4	-135.3	-143.8	
R&	D costs	Development of ECP	32.5	32.5	239.5	278.1	162.4	459.4	
Social activity costs Disclosure of information, etc.		Disclosure of information, etc.	10.9	12.6	62.3	64.5	16.3	139.2	
Environmental damage costs Recovery from soil pollution, etc		Recovery from soil pollution, etc.	0.0	0.0	0.0	0.0	0.0	0.0	
Total			357.7	374.0	938.7	1,060.4	257.0	700.5	
		Total expenditure during the period	3,566.3	4,743.0					
Total R&D expenditure of		Total R&D expenditure during the period	18.750.9	19.613.8					

#### **Basic framework**

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

As in TOSHIBA TEC's previous environmental accounting, the amounts of "investment" and "expenses" are clarified. The principal difference from the previous year's environmental accounting is that "depreciation costs" concerning environmental facilities, which were previously not reported as "expenses," are reported as "expenses." Only expenditure for the facilities acquired in fiscal 1999 or later is within the scope of calculation of depreciation costs.

Regarding benefits, since no unified standards have been established, environmental impact reduction benefits are indicated quantitatively and also calculated in monetary value in TOSHIBA TEC's environmental accounting. The following table shows TOSHIBA

TEC Group's classification of benefits. "Actual benefits" are benefits that can be directly converted into monetary value. "Assumed benefits" are the reduction in environmental impacts on the atmosphere, water and soil. In "customer benefits" reduction in power consumption or paper rolls in terms of POS terminals, MFPs, and vacuum cleaners, and other economic benefits are evaluated. "Risk prevention benefits" are benefits of investment in environmental structures to prevent risks which may otherwise occur in the future.

#### Classification of benefits

Economic benefit items		Environmental impact reduction items
Actual Environmental impacts clarified quantitatively and easily converted into monetary value		Reduction of electricity, reduction of fuel, reduction of water, reduction of waste (including proceeds from sale of items with value)
Assumed benefits	Environmental impacts clarified quantitatively and converted into monetary value based on certain assumptions	Reduction of environmental impacts on atmosphere, reduction of environmental impacts on water
Customer benefits	Reduction of environmental impacts during use by customers, such as reduction of power consumption, and other economic benefits are calculated.	Reduction of environmental impacts during use of products
Risk prevention benefits	The extent to which risks are reduced after the investment compared with before the investment is calculated	Prevention of environmental risks that might otherwise occur in the future

henefits and the occu

• 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 Overnemental 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 as oils indicated quantitative) and the environmental impact neduction of environmental impacts is calculated in terms of monetary value to enable comparison of various environmental impacts on the same basis. \*Explanation of the concept of weighting by referring to cadmium and hexavalent chronium

. ental standard values for cadmium and hexavalent chromium are 0.01mg/ Environmental standard values for cadmium and hexavalent chromium are 0.01mg/ and 0.05mg/1 respectively, and the reciprocast). Tool and 20, respectively, are used as weighting coefficients for the substances. According to comparison using weighting coefficients, environmental impact cost of hexavalent chromium is calculated to be 42,502,144kg, which is one filth of that of cadmium. Regarding atmosphere-related environmental impacts, data of ACGIH are used for weighting.

Basis for calculation of customer benefits

casts to catculation 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 TEC'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:

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

 Basis for calculation of risk prevention benefits Datas for calculation of his prevention between 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:

Risk prevention benefits =Quantity of chemical substances stored x Basic amount (monetary value) x Impact coefficient x Occurrence coefficient

where the basic amount and the impact coefficient are those used for assumed benefits and the occurrence coefficient is a value unique to TOSHIBA TEC.

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Basis for calculation of assumed benefits

Environmental benefits Unit: milli					
Classification	Contents	TOSHIBA TEC	Group	Total	
Actual benefits	Benefits that can be directly converted into monetary value	497.1	319.3	816.4	
Assumed benefits	Benefits concerning reduction in environmental impacts	45.3	3,912.3	3,957.6	
Customer benefits	Reduction of environmental impacts at the usage phase	1,099.6	0.0	1,099.6	
Risk prevention benefits	The extent to which risks are reduced after the investment compared with before the investment is calculated	60.1	0.0	60.1	
Total		1,702.2	4,231.6	5,933.8	

#### Breakdown of actual benefits

Item		Environmental impact reduction*	Monetary value of benefits (Million yen)
	TOSHIBA TEC	8,116.2	454.1
Energy (k@)	Group	7,149.1	302.5
	Total	15,265.3	756.6
	TOSHIBA TEC	11.1	36.3
Waste (t)	Group	258.1	3.2
	Total	269.2	39.5
	TOSHIBA TEC	192.8	6.7
Water (km)	Group	330.0	13.5
	Total	522.8	20.2
Total			816.3

Indicated in the above table are differences in volumes of environmental impacts between fiscal 2001 and fiscal 2002.

#### Breakdown of risk prevention benefits

Breakdown o	of assume	d benefits
-------------	-----------	------------

Item		Environmental impact reduction (kg) *	Monetary value of benefits (Million yen)	
Environmental impact	TOSHIBA TEC	22,102.0	45.3	
reduction benefits at the	Group	7,626.0	3,912.3	
manufacturing phase (kg)	Total	29,728.0	3,957.6	
*Indicated in the above table are differences in volumes of environmental				

impacts between fiscal 2001 and fiscal 2002. Breakdown of customer benefits

Iter	m	Environmental impact reduction	Monetary value of benefits (Milia		
Environmental impact	Electricity	10,282,000kWh	243.6		
reduction benefits at the	Paper rolls	1,425t	856.0		
usage phase	Total		1,099.6		

Unit: millions of yen

		Business site	Investments	Monetary value of benefits*
		Ohito	8.3	27.8
Environmental impact reduction benefits at the	TOSHIBA TEC	Mishima	5.0	17.9
usage phase		Hadano	13.3	14.4
	Total		26.6	60.1

\*The values are converted from the environmental risk reduction, based on investments in facilities and equipment covered in or conforming to the TOSHIBA Group Guidelines for Environmental Structures, for fiscal years 1999 through 2002.

#### **Tool for environmental management**

A good working definition of environmental accounting is that it is a tool used to reflect environmental considerations in decision-making. Thus, environmental accounting underpins environmental management.

There are various types of environmental impacts, such as waste and air pollution. Because different standards are used for different types of environmental impacts, it is difficult to quantify the total environmental impact. To facilitate the use of environmental accounting in decision-making, it is desirable to have a common standard for environmental impacts of all types.

Environmental issues involve negative externalities. TOSHIBA TEC is attempting to take negative externalities into account or, at least, clarify them, so as to ensure that decision-making on environmental countermeasures is informed by environmental accounting, and contributes to the reduction of environmental impacts on society.

The figure on the right indicates the outline of TOSHIBA TEC's environmental accounting. TOSHIBA TEC's environmental accounting for fiscal 1999 principally concerned the second and the fourth quadrants. For fiscal 2000, TOSHIBA TEC calculated the first quadrant, benefits to society. In the environmental accounting for fiscal 2001, risk prevention benefits, which correspond to the third quadrant, were calculated. Benefits of investment in environmental structures for the purpose of preventing pollution of soil and groundwater are evaluated as benefits of preventing risks that might otherwise occur in the future. TOSHIBA TEC intends to use this indicator in decision-making concerning prioritization of environmental investment projects and investment decisions.





# **Environment-related investments**

To reduce environmental impacts generated due to business activities and prevent environmental risks, TOSHIBA TEC is making various investments towards environmental protection. TOSHIBA TEC employs the production process, which causes less environmental impacts, makes investments in environment-related facilities in accordance with laws and regulations, implements monitoring and measurements for maintaining voluntary standards. These activities are expanded to the whole TOSHIBA TEC Group, which strives to improve the level of these activities to protect a global environment.



#### Change of investments in environment-related facilities

# **Environmental risk management**

TOSHIBA TEC have finished taking measures against almost all possible risks, through active investments. It will be important to carry out daily management including inspections on environment-related facilities, as future measures.

### Environmental risk management cases Vacant lot soil measurement after transferring the subsidiary company (TEC IZU DENSHI)

No problems were found in the soil quality measurement on the vacant lot, performed in accordance with the regulations, after the liquidation of TEC IZU DENSHI CO., LTD.



Soil quality measurements

#### Noise prevention (Mishima Business Center)

TOSHIBA TEC conducted a periodical noise measurement in August 2002 and found the noise criterion (45 dB or lower) was exceeded in the east of the site during the night. The noise was caused by ventilation ducts and air conditioners in the machine rooms.

To take a corrective action, frequency analysis was made on the generated noise. Attaching a silencer to the ventilation duct, providing soundproof rugging and installing soundproof walls around the machine rooms lowered the noise level between 42.3 and 42.9 dB.

#### Groundwater monitoring (Ohito Business Center)

The Ohito Business Center is monitoring the water, semiannually in the three monitoring wells, and annually in groundwater used for toilets at the four places. The extracted water was analyzed regarding 9 check items, to confirm the water is not polluted.

#### Prevention of soil pollution (Hadano Plant)

The Hadano Plant removed the surface from the floor of the workplaces, which used much oil, and applied watertight coating, in order to prevent soil and groundwater pollution due to oil. To prevent oil from the facilities and equipment from soaking into the ground, a container was installed. Thus, double protection against soil pollution was provided. The container was also installed in the die storage place for dripping oil from the die.

#### Polychlorinated biphenyl (PCB) control

The Mishima and Ohito Business Centers are strictly controlling the PCB-containing transformers in custody, and carry out monthly inspections. Based on the Law Concerning Special Measure against PCB Waste, they are considering how to dispose of PCB, in detail, in association with the Toshiba Group.

#### **Environmental structure management**

Environmental structures are improved according to the Toshiba Group's guidelines, in order to reduce environmental impact.

- A Guidelines for installation and structure of water dikes and containers
- B Guidelines for installation and structure of scrubbers for waste gas
- C Guidelines for installation and structure of waste storage facilities
- D Guidelines for installation and structure of chemical warehouses
- E Guidelines for piping liquid chemical substances and waste water
- F Guidelines for installation and structure of waste water treatment facilities and on-site water waste systems
- G Guidelines for installation and structure of plating equipment
- H Guidelines for installation and structure of oil storage facilitie



Soundproof wall around the machine room





Watertight coating







To prevent global warming, the use of fuel causing less  $CO_2$  emissions and energy-saving are significantly effective. The TOSHIBA TEC Group substituted fuel with less environmental impact or abolished the use of fuel. Therefore, the use of heavy oil was abolished in the main business sites of the Mishima and Ohito Business Centers. TOSEI DENKI abolished the use of kerosene and substituted propane gas. TOSHIBA TEC is pushing forward with employing the electricity operation system, inverters and power monitoring system for the purpose of ensuring appropriate use of electricity.



#### **Energy-saving activities**

In the Mishima Business Center where the largest amount of electricity is consumed in the TOSHIBA TEC Group, the integration of business sites caused this electricity consumption to increase in fiscal 2002. Therefore, they regarded the reduction of electricity consumption to be their top-priority problem. The Mishima Business Center is implementing various actions under the advice of the Energy Conservation Center through their Corporate Energy Saving Diagnosis. Education regarding energy saving was given to all employees.

#### Improvements on lighting equipment

When replacing the lighting equipment, each business site uses an inverter superior in energy saving. Considering illuminating efficiency, the business sites facilitate energy saving by modifying the ceiling where the lighting equipment is attached, using the infrared body heat sensor and the dimmer device.

#### Water consumption

As part of the energy saving activities, water consumption is reduced. The water pipes under the ground in Ohito, Mishima and TOSEI DENKI became decrepit as time passed. They are establishing the water pipes on the ground to facilitate control. Discharged water from the air conditioners or cooling equipment is collected to reuse for toilets, for the purpose of reducing water consumption.



Measures implemented in fiscal 2002 (Mishima)

No.	Item	Objective
1	Establishing water pipes on the ground	Prevention of water leakage due to decrepit pipes
2	Removing temperature chambers	Reduction of electricity consumption
3	Using gas heating pumps for air conditioners in Bld. B	Substitution of natural town gas for electricity
4	Replacing receiving transformers	Improvement of electricity reception performance
5	Modifying the air conditioning system in the clean room	Improvement of air conditioning performance
6	Using the energy-saving system for air conditioning in Bld. A	Improvement of air conditioning performance and prevention of excessive use
7	Replacing the elevator with an energy-saving one	Energy saving
8	Installing the power monitor	Monitoring for appropriate use
9	Using the automatic controlling system for compressors	Ensuring appropriate pressure and providing automatic control
10	Using gas heating pumps for air conditioners in Bld. C	Substitution of natural town gas for electricity
11	Installing sheet shutters	Improvement of air conditioning performance by shutting out the open air
12	Installing partition sheets in offices in Bld. A	Improvement of air conditioning performance
13	Modifying air supply, ventilation and timer in the clean room	Improvement of air conditioning performance and prevention of excessive use





Automatic compressor controlling system

gas heating pump



modification to increase

lighting efficiency





Pipes established on the around (Ohito)

# Zero Emissions of Waste



TOSHIBA TEC is implementing activities for reduction of waste to achieve zero emissions, according to the voluntary action plan (the third voluntary environmental plan). The consequent ratio of the final disposal quantity to total discharge reached 0.78%, as a whole in the three domestic production sites in fiscal 2002, thus achieving zero emissions. TOSHIBA TEC will be committed to achieving zero emissions in the Hadano Plant in fisical 2003 and reducing total waste released in all business sites, while supporting subsidiary production companies conduct activities toward zero emissions of waste.



**Modifying waste separation criteria for zero emissions (Hadano)** To achieve zero emissions, the separation of waste must be performed strictly according to the separation criteria. Several materials previously separated as waste to be landfilled or incinerated are now separated for recycling. The Hadano Plant has modified the criteria to achieve zero emissions in fiscal 2003.

		Fiscal 2001	Fiscal 2002
Number of recycla	ble materials	46	53
Number of	Land-filled	9	5
waste materials	Incinerated	6	4

#### **Recycling defective parts (Hadano)**

The Hadano Plant is aiming at zero emissions of waste while facilitating the reduction of total material input. In-process parts regarded as defective are classified according to the material, crushed, repelletized and then used for molding



Repellets

Made from repellets

**Zero emissions of waste on a continuous basis (Ohito)** The Ohito Business Center achieved zero emissions of waste already in fiscal 2000. This is enabled through analyzing waste, employees' cooperation in thorough separation, and selection of recyclers having a wide range of technologies. The environment meeting members patrol the waste separation spaces in each workplace and understand the separated state, in order to ensure the compliance with the separation criteria and reduce the amount of waste.



Inspections of intermediate treatment companies at their sites

TOSHIBA TEC makes periodical inspections of not only the landfills but also the intermediate treatment sites. Though glasses are disposed of by sale, the glass disposal plants are inspected for their legal permits, facility operations and the environmental conditions around the plant. The interview results are used to determine whether or not the consignment is continued.



Inspection sheet/report for glass disposal plants made by the Hadano Plant



# Audit related to ISO 14001 Management System

To confirm the compliance with ISO 14001 and the environmental performance, TOSHIBA TEC is audited by a thirdparty organization once a year, and implements internal audits. To enrich the internal audits, TOSHIBA TEC is fostering internal auditors and providing special training for them.

#### Audits by third-party organizations

Audited site	Audited by	Date of audit	Results		Representative comments
Ohito	Japan Quality	June 8, 2002	No. of strong	2	They are committed to product design based on the "ECP (environmentally conscious products)
Business	Assurance		points		Creation Activity Policy" and have developed three environmentally conscious POS terminals.
Center	Organization (JQA)		No. of	7	The use of cutting oils with less environmental impacts is favorably evaluated in
			opportunities for		achieving the target. However, control procedures for using new substances and
			improvement		disposing of substances according to MSDS are required.
Hadano Plant	Japan Audit and	Feb. 14, 2003	No. of	4	·Reduction of lead soldering and adhesives in products
	Certification		recommen-		Information opening to the public by issuing the site's environmental report
	Organization for		dations		·Product planning and design through EOL (end-of-life) analysis and LCP (life cycle planning)
	Environment and		No. of	4	·Though there are some inconsistencies between the emergency response test
	Quality (JACO)		observations		and its manual, the manual has not yet been modified.
					The promotion plan is implemented, but it is insufficient to monitor the
					implementations for achieving the targets.
Mishima	Japan Quality	Feb. 20, 2003	No. of strong	2	The criterion for registering remarkable environmental factors was lowered from 20 to 18
Business	Assurance		points		points, to expand the registration range, thus expanding the improvement range.
Center	Organization (JQA)		No. of	17	The date of collecting manifest slips is inconsistent with the prescribed date in
			opportunities for		the slip issuing procedure.
			improvement		The personnel responsible for environmental protection supervise the training for
					internal environmental auditors. The training plan should be mentioned in the
					"Environment Targets/Environmental Protection Promotion Plan and Implementation."

# Internal environmental audit complying with ISO 14001 Environmental Management System

Based on 4.5.4 Environmental Management System Audit in the ISO 14001 Standard for environment management system, each site created a monitoring program and is periodically conducting internal audits. The internal audit team visits and audits the workplaces according to the audit inspection sheets, specific to each workplace, which the team created.



Internal audit

#### **Fostering environmental auditors**

TOSHIBA TEC fosters internal auditors to confirm the compliance with the ISO 14001 environmental management system. There are two ways to foster them; one is public qualification through sending the employees to exclusive external training organizations, and the other is certification through in-house training and practice. The externally qualified auditors serve as the trainers for the in-house training, and some external training experts may be invited whenever required.

The internal auditors start their activities after completing the in-house practical training program. They also participate in the periodical follow-up training.

#### Number of domestic auditors

Qualification	Fostered via	Head office	Ohito	Mishima	Hadano	Group	Total
ISO 14001 auditor	External organization	0	0	0	1	0	1
ISO 14001 assistant auditor	External organization	2	2	1	3	0	8
Chief internal auditor	External organization	2	0	3	2	0	7
	In-house training	0	0	3	4	0	7
Internal auditor	External organization	1	5	5	4	2	17
	In-house training	0	9	11	14	14	48
No. of qualifications		5	16	23	28	16	88
No. of auditors		3	9	18	23	14	67

#### Number of overseas auditors

Qualification	Fostered via	Singapore	Indonesia	China	France	United States	Malaysia	Total
ISO 14001 assistant auditor	External organization	1	0	0	0	0	0	1
Chief internal auditor	External organization	1	0	2	0	2	2	7
	In-house training	6	0	0	0	1	0	7
Internal auditor	External organization	8	18	26	6	2	11	71
	In-house training	12	8	0	0	5	0	25
No. of qualifications		28	26	28	6	10	13	111
No. of auditors		20	26	28	6	7	11	98

# EASTER\*

TOSHIBA TEC carries out an annual environmental audit on each business site, starting in fiscal 1994, according to the Toshiba's EASTER environmental audit system.

This audit aims at improving the environmental protection level and contains the Toshiba Environmental Audit by the Toshiba audit team and In-house Environmental Audit by the in-house audit team appointed by the Assistant Environmental Protection Promoters. The audit is positioned as part of the corporate management audit.

The in-house audit team conducted environmental audits on subsidiary production companies in fiscal 2002. This team audited the Component Business Group and confirmed environmental risks after integrating business sites.

Assistance to environmental audits in subsidiary companies in Asia is scheduled for fiscal 2003.

\*Environmental Audit System in Toshiba on bases for ECO Responsibility

#### Environmental management system audit

The environmental management systems of all business sites are covered by ISO 14001 certification and a third-party organization audits those systems in connection with the extension of the certification. Auditing of environmental management systems covers all requirements of ISO 14001, including compliance with laws and regulations and emergency preparedness and response, while evaluating the levels compared with the previous year's results in terms of quality improvement and advancement.

#### Auditing of control of workplace

The personnel in charge or supervisors should check the inspection and control status of the workplace and understand the actual status on-site on a daily basis. The audit is carried out to confirm whether such a system is established and works

well, as well as whether the workplace is kept neat, organized and clean.

As for critical facilities, training for emergencies is evaluated to see if the staff acts as in the manuals. Items to be improved and r e c o m m e n d a t i o n s concerning facilities and

operations

identified and transferred to

are

their

every employee.



#### Auditing of the degree of achievement of the voluntary plan

Besides checking the extent to which items of TOSHIBA TEC Voluntary Environmental Plan, such as energy saving, zero emissions, and reduction of waste, have been achieved, the following items are evaluated from the viewpoint of innovativeness and impacts of operation's activities, the degree of participation of personnel and applicability: improvement of the environmental management system, improvement of control of the workplace, communication with local communities, and activities to achieve targets of the voluntary plan.

#### Creation of environmentally conscious products

Concerning creation of environmentally conscious products, technology planning and management and the environmental consciousness of engineering sections in terms of both products and technology are evaluated.

Disclosure of products' environmental performance for the user is socially demanded. Therefore, auditing is conducted in a wider range to confirm whether the products comply with eco-labeling programs and green procurement regulations.

#### **Transferring audit results**

When the EASTER is implemented in one business site, personnel in charge of environmental protection and workplace supervisors of other sites and subsidiary production companies are requested to participate in the audit. Their participation will allow recommendations and items which require improvement, to be transferred within the TOSHIBA TEC Group, in order to continue improvements of the environmental protection level at all business sites.



Environmental audit reports



# **Environmental Education**

The education according to position is offered to the personnel at every level from new employees to senior management, to enhance the environmental consciousness and expertise. The curriculum includes the basic policy for environmental protection, the laws and regulations concerning the environment, the voluntary plan for environmental protection (VPE), the environmental management system (EMS) and the environmental audit. Not only TOSHIBA TEC personnel but also personnel of the subsidiary and cooperating companies receive environmental education.



#### **TOSHIBA TEC Technical Exhibit (Mishima Business Center)**

The TOSHIBA TEC Technical Exhibit was held on October 17 and 18, 2002 at the Izu Gymnasium in the Mishima Business Center. Four instances of



environmentally conscious products were introduced to the employees, the subsidiary companies and the TOSHIBA Group.

Special education

Special environmental education may be provided in accordance with the judgment of the responsible person in each workplace, in addition to the education implemented based on the yearly plan.

Especially in the production departments, the responsible person provides environmental education when installing a facility with great environmental impacts.

Lecture regarding environmental technologies (Mishima Business Center) A lecture was given regarding "EU Directives WEEE and RoHS" on February 27, 2003 in the Mishima Business Center.

A wide range of personnel concerned with engineering, materials procurement and sales attended the lecture and realized again the necessity to promptly comply with such directives.









To a considerable degree, business activities derive their vitality from the physical and mental well-being of employees. It is important for management and supervisors to recognize ensuring the safety and well-being of employees as part of the company's social responsibility, as well as to facilitate appropriate management of health and safety. It is important for employees to have the opportunities to derive personal satisfaction from their work.

TOSHIBA TEC is striving to tackle the health and safety activities alongside the employees, support their health both in mind and body, and provide them with comfortable working environments, in accordance with laws and regulations.

#### Safety control

TOSHIBA TEC has long been seeking to eliminate accidents in the workplace. With regard to the overall rate, TOSHIBA TEC is considerably lower than average for the entire industry and for the manufacturing industry in Japan. It is stepping up its efforts to eliminate accidents and the employees are encouraged to be more conscious of danger in their daily action as to eliminate danger itself, by conducting risk prediction training. As part of the actions, TOSHIBA TEC intends to vigorously promote activities that incorporate the guidelines of the Ministry of Health, Labor and Welfare for safety and hygiene management systems.



#### **Occupational health control**

Control of working environments, work control, and health control are promoted to prevent any medical problems associated with occupations. In the event of periodic medical check-ups indicating problems, such employees have an opportunity for personal consultations with medical professionals to advise them on what they need to do in order to cultivate healthy lifestyles. The check-up results are standardized to ensure data availability on a continuous basis even after a personnel reshuffle.

TOSHIBA TEC is vigorously working to enhance the awareness of employees maintaining a good mental health, by providing education to the employees and supervisors, while encouraging the employees to consult with the medical professionals via e-mail.

A hot line has been opened for employees and their families as members of the TOSHIBA Group where they can receive advice from health-care professionals.



#### Work environment measurement

To maintain a clean working environment, the amounts of fine particles, organic solvents, and specified chemicals are measured to evaluate the conditions in the working environment. Measurements and analysis are carried out by the Work Environment Measurement Group stationed in the Materials Analysis Room of the Mishima Business Center, through periodical visits to the workplaces. If the group finds any problem, it provides support and advises improving the environment of workplaces. The group conducts measurements at neighboring companies, as well as the subsidiary companies.

The Materials Analysis Room facilitates chemical substance analyses of purchased components in association with various analysis organizations in the TOSHIBA Group, as part of green procurement.



Analysis room

# Efforts to develop ECPs

TOSHIBA TEC strives to create Environmentally Conscious Products (ECPs) of which environmental impacts are minimized at every stage of their life cycle - from materials procurement, manufacturing and transportation, through to usage, recycling and disposal.

To create ECPs, TOSHIBA TEC set up the voluntary environmental standards, which prescribed the industry's top-level requirements for environmental considerations for each product, in addition to conventional product assessment. Thus TOSHIBA TEC focuses on the 3R design (reduce, reuse and recycle), energy-saving design and design for reducing environment-related substances.



#### Voluntary environmental standards for POS terminals

NO	Life cycle	Environmental considerations					
	Parts/materials	Recyclable plastics (PP, PS, PE, OC, SAN and ABS) make up 80% or more.					
1	procurement	Voluntarily restricted substances (PCB, asbestos, dioxins, CFCs) and the specified fire retardant					
'		bromides (PBDEs and PBBs) are not contained.					
		Green procurement is implemented.					
	Manufacturing	ODSs (ozone-depleting substances: CFCs, halon, carbon tetrachloride, 1.1.1-trichloroethane, HCFCs,					
2		HBFCs, methyl bromides) which the Montreal Protocol prescribed to reduce or restrict are not used.					
		Lead-free soldering is used for joining.					
	Logistics	Recovered (recycled) paper is used for packing materials.					
3		Styrofoam is not used for packing materials.					
		Polyvinyl chlorides (PVCs) are not used for packing materials.					
4	Usage by customers	Power consumption per function is reduced compared with the conventional products.					
	(Product specifications)	An energy-saving feature is incorporated.					
	Recycling end-	Recyclable materials defined by TOSHIBA TEC make up 75% or more.					
5	of-use products	Environmental considerations are disclosed on the websites and manuals.					
		It is easy to dismantle the product. The product can be disassembled into units with general tools.					
		The material name of plastics having a mass of 25 g or more is indicated.					
	Other	The amount of $CO_2$ emissions is understood, with the LCA method.					
	environmental	The product is designed on the assumption of longevity: Spare parts are identified.					
6	considerations	Items to be inspected are identified.					
		Paper manuals do not exists or recycled paper is used for manuals.					
		Product assessment is conducted.					

Example of compliant products



ST-98 POS terminal

# Promoting system for developing ECPs

The ECP Promoting Committee, established under the Corporate Environmental Protection Council in 1997, has been solving corporate issues regarding development of ECPs. This committee acts according to the following basic policies:

- Set up action plans for compliance with domestic and international laws and regulations
- Facilitate disclosure of environmental information
- Carry out the voluntary environmental plan (product-related items)
- Provide education





# **ECP** activities

TOSHIBA TEC has conducted the following ECP development activities and created the excellent ECPs.



#### **Future activities**

In fiscal 2003, TOSHIBA TEC would like to focus on the following two points, in addition to the above activities: • Revise the ECP Design Guidelines for transferring 3R design knowledge.

• Create the guidelines for understanding and reducing products' total environmental impacts, in order to contribute to the environmental management.

# **Planning and Design**

# Life cycle planning (LCP)

LCA evaluates environmental impacts generated during the product's life cycle after designing, while LCP drafts an environmentally conscious design concept suitable for each product.



Relationship between LCA and LCP

LCP is TOSHIBA's original method of environmentally conscious design, which allows environmental specifications to be available throughout the product's life cycle. Also included are ideas for improving maintainability and reusability of parts. To realize such design, data regarding the life cycle assessment (LCA) and quality function deployment (OFD) are effectively used.

TOSHIBA TEC are surging forward with planning environmentally conscious vacuum cleaners, using the design support tool implementing the LCP method. Part of them has already been commercialized. The LCP will be transferred to other products.



Example of environmentally conscious design concept created through LCP (VC-P8X)



### **Environmental assessment of products**

TOSHIBA TEC started product assessment in the home electric appliances division, according to the execution of the Law for Promotion of Utilization of Recycled Resources in 1991 (currently called the Law regarding Promotion of the Effective Use of Resources).

It has been implemented for all products manufactured in all divisions since 1995 to evaluate environmental effects at each stage of product planning, design, trial production, and preproduction. TOSHIBA TEC created the evaluation list for various design concepts: "Reduce" design for saving resources and lengthening service life, "Reuse" design for reusing parts, "Recycle" design for recycling parts as materials, energy-saving design for reducing power consumption in usage, and environmental design for restricting and reducing environment-related substances. With the list, TOSHIBA TEC evaluates the improvements target achievements compared with the previous models.

The confirmation of compliance with the laws and regulations, the environmental action plans and environmental labeling programs, and the evaluation of LCA results are made simultaneously.

The final evaluation results are fed back in order to develop next models.

### Life-cycle assessment (LCA)

LCA makes a quantitative evaluation regarding the environmental impact that a product has at every stage, covering materials procurement, manufacturing, transportation, usage, disposal and recycling, in order to reduce its environmental impact, based on the evaluation result.

TOSHIBA TEC introduced LCA in 1997. The applications were gradually expanded within the corporation and the assessment on main product groups were completed in fiscal 2001. In fiscal 2002, the evaluation on new products of the main product groups was an obligation, and the range of the target products was expanded.

The home electric appliances division is the first to incorporate LCA into product assessment in September 1998, in order to develop products with less environmental impacts. For instance, MAGIC CYCLONE vacuum cleaners requiring no dust bags, which are the mainstream of vacuum cleaners, reduce life cycle  $CO_2$  emissions by approx. 8%, compared with conventional vacuum cleaners.

As for the COPIX TF-3200 facsimile machine for business use, TOSHIBA TEC focused on the reduction of power consumption in standby mode. As a result, CO<sub>2</sub> emissions at the usage stage were remarkably reduced by approx. 60%, compared to the previous model. Thermal printing energy is only considered in the above calculation, regarding environmental impacts of thermal paper.)



The environmental impacts of the POS terminals for mass merchandisers mainly consist of thermal paper used, its incineration and power consumption at the use stage. Therefore TOSHIBA TEC adopted the first-in-the-industry electronic journal system, where no paper is used for journal information, to reduce the life cycle CO<sub>2</sub> emissions by approx. 23%, compared with the previous system. TOSHIBA TEC aims at further reducing power consumption and the amount of paper used.

Life cycle CO<sub>2</sub> emissions from POS terminals for mass merchandisers Usage (power consumption) Materials procurement Manufacturing Transportation Usage (receipt paper) Usage (receipts incinerated) Disposal 177 01 01 35.3 20.3 26.4 0 1 Conventional system 177 01 01 35.3 10.2 13.2 0.1 Approx. 23% reduced Electronic journal system 100 (%) 0 20 40 60 80

(It is assumed that the receipts are incinerated.)

# **Commitments to green procurement**

At the raw materials procurement stage, TOSHIBA TEC moves forward with green procurement as part of producing environmentally conscious products. To procure environmentally conscious raw materials from suppliers, who are actively undertaking environmental protection measures, TOSHIBA TEC is conducting the supplier environmental protection evaluation and procurement item environmental performance, according to the Green Procurement Guidelines for Materials. The guidelines were revised in January 2003, as the result of reviewing the types and ranks of environment-related chemical substances.

#### Supplier environmental protection evaluation

TOSHIBA TEC evaluates the suppliers according to the following criteria and ranking them by scores:

- (1) Has gained an ISO 14001 certification
- (2) Promotes green procurement

(3) Is taking 10 environmental protection measures

TOSHIBA TEC gives priority to procurement from highly ranked suppliers, and request less highly ranked suppliers to improve their operations or provide them with instructions and assistance.

TOSHIBA TEC aims to improve the ratio of suppliers excellent in environmental protection to all suppliers.

#### Procurement item environmental performance

TOSHIBA TEC investigates the procurement item environmental performance, according to the following items:

- (1) Resource saving
- (2) Reusability
- (3) Recyclability
- (4) Use of recycled materials
- (5) Ease of disposal
- (6) Environmental-related substances

The results are converted into a database. By linking the parts search system with environmental performance information, the database can be used by not only the design departments, but also the manufacturing and procurement departments.



# **Efforts for EU RoHS Directives**

The EU's "Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)" Directives (2002/95/EC) are enacted in February 2003. These directives are facilitating the legislation in the Member States. Consequently, electrical and electronic equipment which contains the specified hazardous substances (lead, mercury, cadmium, hexavalent chromium, PBB and PBDE) may not be able to sell in the EU countries in and after July 2006.

RoHS Directives and related legislation



#### Procured material RoHS operation WG

TOSHIBA TEC organized a WG by collecting members from the environment, design and materials procurement departments, in order to carry out corporate-wide activities for abolishing the use of the specified hazardous substances premeditatedly on all products, component parts and materials for all destinations.

#### Plan for complying with the RoHS Directives





# **Reduction of environment-related chemical substances contained in products**

Heavy metals, including lead and cadmium, may pollute groundwater when they are disposed of by landfill. Polyvinyl chloride and plastics containing halogenated fire retardants may generate toxic gas when incinerated. TOSHIBA TEC's commitments to reducing such chemical substances contained in the products are expanding as follows:



# **Ohito Business Center**



The Ohito Business Center swears, in its environmental policy, to hand down the natural environment to the next generation in a sound state and protect the irreplaceable global environment. The environmental management manual and the

Masanori Ninomiya General Manager

environmental protection regulations incorporate this policy. I believe the compliance with the ISO 14001 requirements, laws and regulations will lead to environmental protection.

The Ohito Business Center will undergo its second ISO 14001 audit for renewal this year. We are committed to energy saving and the reduction of waste while continuing to make improvements toward environmental protection. The Ohito Business Center is developing ECPs as scheduled, to ensure its position as a top runner of the industry.

#### Investments in environment-related facilities

For the purpose of minimizing environmental impacts from business activities and preventing environmental risks, the Ohito Business Center introduced production facilities to generate less environmental impacts, and continues to make investments in equipment and facilities to satisfy the regulatory and voluntary environmental requirements.

The Ohito Business Center made investments to prevent water pollution and reducing waste from 1995 to 1997, and has recently invested to reduce CO<sub>2</sub> emissions, while focusing on energy-saving facilities to prevent global warming. In fiscal 2002, energy-saving controllers for air conditioners were installed and the inverter lighting system was introduced.





#### **Profile**

Description of business:	Development, design and production
	of POS systems, electronic registers,
	OA equipment and bar code printers
Foundation:	February 1950
Premises area:	66,170 m <sup>2</sup>
Floor space:	42,018 m <sup>2</sup>
Number of employees:	617 (as of March 31, 2003)

#### **Environmental impact (Fiscal 2002)**

City water/well water used:	64,634 m <sup>3</sup>
Water discharge to sewer:	26,051 m <sup>3</sup>
Electricity consumption:	4,660,000 kWh
Waste discharge:	4.3 tons
Chemical substances discharge:	34 kg

(TOSHIBA Group's restricted substances)

\* Values for waste discharge and chemical substance discharge contain the ones from the Component Business Group and TEC PRECISION, INC.

#### Main products





Energy-saving controller

#### Voluntary action plan implementations

#### Zero emissions of waste

The Ohito Business Center determined 50 or more substances to be separated, under the motto "Waste when mixed, Resource when separated" and has expanded waste reduction activities, to achieve zero emissions of waste in fiscal 2000.

#### Reduction of chemical substance discharge

The canned spray solvent used in cleaning printed circuit boards, used greenhouse gases (HFCs). The Ohito Business Center switched to LP gases, achieving zero HFC emissions. Water-soluble paints replaced oilbased paints containing xylene, allowing chemical substance discharge to be remarkably reduced.

#### Reductions of CO<sub>2</sub> emissions (energy consumption)

The Ohito Business Center changed heavy oil heating to air-conditioning by the end of fiscal 2001. To restrict the increase in power consumption, the controllers were installed in the air conditioners to achieve 25% energy saving with the optimum setup. In the summertime, the peak-cut agreement was made with Tokyo Electric Power Company and thus the lunch time was shifted. The air conditioners were stopped during the lunch break to save energy.

#### **Environment-related education**

The Ohito Business Center provides various types of education in accordance with the environmental protection regulations, to encourage the employees of TOSHIBA TEC and the subsidiary companies stationed in the Ohito Business Center to recognize the importance of all environmental protection activities. In fiscal 2002, some employees were qualified, as officially or internally certified environmental auditors, for the purpose of improving the quality of environmental protection activities.





#### Chemical substance discharge







## **Mishima Business Center**



The Mishima Business Center merged the Yanagicho Works in January 2002. After the lighting equipment development and production divisions relocated, the vacant lot became the base for developing and producing digital copiers.

General Manager Accordingly, the Mishima Business

Center reviewed its environmental protection system and understood the changes regarding environmental impacts, in order to improve the efficiency of its environmental management.

The Mishima Business Center set up and is making efforts to meet the targets to save energy, achieve zero emissions of waste, reduce chemical substance discharge and develop ECPs, in accordance with the Third Voluntary Environmental Plan started in fiscal 2001.

We regard it important to "front-load" the environmental protection, and thus are moving forward with environmental measures at a faster pace.

#### Investments in environment-related facilities

For the purpose of minimizing environmental impacts from business activities and preventing environmental risks, the Mishima Business Center introduced production facilities to generate less environmental impacts, and continues to make investments in monitoring and measuring facilities to satisfy the voluntary environmental requirements.

The Mishima Business Center made investments to prevent water and soil pollution by 1998. In and after 1999, the Mishima Business Center has been surging forward with the introduction of energy-saving equipment and clean energyoperated equipment, in order to prevent global warming.





#### **Profile**

Description of business:	Development, design and
	production of digital copiers and
	telecommunication equipment
Foundation:	January 1963
Premises area:	49,645 m <sup>2</sup>
Floor space:	57,625 m <sup>2</sup>
Number of employees:	1,251 (as of March 31, 2003)

#### **Environmental impact (Fiscal 2002)**

City water/well water used:97,124 m³Water discharge to sewer:63,889 m³Electricity consumption:11,820,000 kWhWaste discharge:14.3 tonsChemical substances discharge:82 kg(TOSHIBA Group's restricted substances)

#### **Main products**



e-STUDIO210c/310c High-speed full-color MFP



Highly efficient power receiving transformer

#### Voluntary action plan implementations

#### Zero emissions of waste

Thorough separation of waste in each workplace allowed zero emissions of waste in fiscal 2002. Used tealeaves and weeds were composted, reducing a yearly amount of incinerated waste by 12.6 tons. Part of the waste, which had been landfilled, was recycled as a supplementary material in steel manufacturing, achieving a yearly reduction of 0.8 tons.

#### Reduction of chemical substance discharge

Since the Mishima Business Center manufactured lighting equipment, a large amount of chemical substances including styrene and xylene was discharged. However, the Mishima Business Center currently only discharges a small amount of toluene and methanol used in its research and development.

#### Reductions of CO<sub>2</sub> emissions (energy consumption)

The Mishima Business Center achieved the target for reducing  $CO_2$  emissions and power consumption in fiscal 2002. The adoption of a highly efficient power receiving transformer in the special high-voltage electricity receiving facility realized yearly energy saving of 50,000 kWh. The installation of a device, which controlled the number of compressors in accordance with compressed air demand, enabled yearly energy savings of 48,000 kWh. Such reduction in energy used attained the reduction of  $CO_2$  emissions by 2,646 tons, compared with fiscal 1990.







\* Data for fiscal 2001 is out of the ordinary since the lighting equipment division relocated at the beginning of fiscal 2001 and the digital copier division moved into the Mishima Business Center at the end of the same fiscal year.

#### **Environment-related education**

The Mishima Business Center provides nine environmental education courses once a year to encourage the employees of TOSHIBA TEC and the subsidiary companies stationed in the Mishima Business Center to recognize the importance of the environmental protection activities.



# Hadano Plant



The Hadano Plant is located at the foot of the Tanzawa Mountains, which are affluent in natural resources. The resources include Kobo Spring, which is famous for its pure spring water. As a manufacturer, we recognize we are

Tadao Miyabayashi General Manager

General Manager obliged to hand down this environment to the next generation, and are committed to contributing to the establishment of a 21st-century sustainable society.



Kobo Spring

The Hadano Plant set up and is making efforts to meet the targets to save energy, expand the recirculatory use of water, achieve zero emissions of waste, reduce chemical substance discharge and develop ECPs, in accordance with the Third Voluntary Environmental Plan started in fiscal 2001.

The Hadano Plant started to make its individual efforts for resource saving and recycling. In fiscal 2002, the plant's environmental report was issued. We will front-load our various environmental measures, in order to provide local communities with a sense of security through our environmental protection activities.

#### Investments in environment-related facilities

For the purpose of minimizing environmental impacts from business activities and preventing environmental risks, the Hadano Plant makes various investments for environmental protection.

The Hadano Plant made investments mainly preventing water and soil pollution and waste reduction by fiscal 1999. In and after 2000, the Hadano Plant has been surging forward with energy saving, through the use of insulation material for the roof and the installation of a power monitoring system.





#### **Profile**

Description of business:	Development, design and production		
	of vacuum cleaners, health		
	equipment and cooking equipment		
Foundation:	April 1974		
Premises area:	36,203 m <sup>2</sup>		
Floor space:	22,759 m <sup>2</sup>		
Number of employees:	400 (as of March 31, 2003)		

#### **Environmental impact (Fiscal 2002)**

City water used:	18,991 m <sup>3</sup>
Water recirculated:	3,214 m <sup>3</sup>
Water discharge to sewer:	13,019 m <sup>3</sup>
Water discharge to rivers:	5,972 m <sup>3</sup>
Electricity consumption:	7,470,000 kWh
Waste discharge:	11.3 tons
Chemical substances discharge:	1,250 kg
(TOSHIBA Group's restricted s	ubstances)

#### Main products



VC-R12C vacuum cleaner



EMC-1 massage sofa



Insulation material for the roof



#### Voluntary action plan implementations

#### Zero emissions of waste

The Hadano Plant is implementing activities for achieving zero emissions of waste in fiscal 2003. Thorough separation of waste in each workplace realized a recycling ratio of 98.8% in fiscal 2002. RPF\* was substituted for paper and soft plastic, which had been incinerated. Polishing sludge was recycled as a base course material. Consequently, yearly waste reduction

of 26.4 tons was achieved. For effective use of resources, inhouse recycling of waste generated in resin molding is carried out using the repelleting system. This enabled the yearly reduction of new material used by 20 tons.



Repelleting system

#### Reduction of chemical substance discharge

The Hadano Plant uses adhesives containing less ethyl acetate, which is one of the main restricted substances. Instead of using methanol, mechanical fixing and the substitution of ethanol are employed. As a result, the chemical substance discharge in fiscal 2002 was remarkably reduced by 56%, compared with fiscal 2000, achieving the fiscal 2005 target of the third voluntary environmental plan.

#### Reductions of CO<sub>2</sub> emissions (energy consumption)

The amount of heavy oil used for heating increased in fiscal 2002, and the ratio of  $CO_2$  emissions was 96.7%, compared with fiscal 1990.



\* RPF (Refuse Paper and Plastic Fuel): Solid fuel made by blending refuse paper and waste soft plastic (except for polyvinyl chloride).





#### **Environment-related education**

The Hadano Plant provides nine environmental education courses once a year to encourage the employees of

TOSHIBA TEC and the subsidiary companies stationed in



the Hadano Plant to recognize the importance of the environmental protection activities.



### Component Business Group and TEC PRECISION, INC.



The Component Business Group integrated facilities and technologies for processing highly valued components, in fiscal 2001, in order to efficientize and downsize the business system.

Shoji Uematsu

At the transfer of 65 units of equipment/

General Manager facilities from the Ohito Business Center and the Yanagicho Works, environmental assessments were made and the foundation of the building was reinforced to endure vibrations.

Since many facilities use machine oil, the pits were installed to prevent potential oil spillage, attempting to eliminate environmental risks. The Component Business Group is surging forward with the reinforcement of the water discharge monitoring system, in case of unexpected accidents, such as a vehicle fuel leak.

For saving energy, the power monitoring system was introduced to improve the efficiency of operations of the facility consuming much electricity. We are also pursuing monetary effects through the reduction of power consumption. TEC PRECISION, INC. is subject to the same environmental management, as a subsidiary company supervised by the Component Business Group.

#### Investments in environmental-related facilities

To reinforce the water discharge control/monitoring system, the Component Business Group reviewed the water discharge routes. The measures started in fiscal 2002 include setting up equipment for separating industrial waste water, releasing not-industrial waste water to the public sewer, attaching a water quality monitoring device at the rainwater outlets, and installing an emergency water tank.





#### **Profile**

Description of business:	s: Production of printed circuit boards	
	(PCBs) for electronic equipment	
	Development and design of power supplies	
	and circuits for electronic equipment	
	Development of mechanical components	
Foundation:	April 1999	
Premises area:	12,941 m <sup>2</sup>	
Floor space:	3,987 m <sup>2</sup>	
Number of employees:	218 (as of March 31, 2003)	

#### **Environmental impact (Fiscal 2002)**

City water used:	
Water discharge to sewer:	
Water discharge to rivers:	
Electricity consumption:	
Main products	

12,400 m<sup>3</sup> 10.900 m<sup>3</sup> 1,500 m<sup>3</sup> 5,350,000 kWh





Halogen-free PCB

PCB with lead-free soldered components



Emergency water tank and rainwater outlet



#### Voluntary action plan implementations

#### Zero emissions of waste

All employees have been involved in waste separation toward recycling, and thus achieving zero emissions in fiscal 2000. As one of these efforts, packing materials for components, which account for 10% of total waste discharge (cases and reels) are returned to the suppliers to promote reuse.

#### **Reduction of chemical substance discharge**

Lead soldering, used in mounting components on printed circuit boards, accounts for approx. 99% of the total amount of restricted chemical substances. To expand the substitution of lead-free soldering, the production facility was reinforced.

#### **Energy saving**

Integration of the component business in January 2002 brought about substantial personnel reshuffle and equipment transfer. As a result, power consumption at the Component Business Group and TEC PRECISION in fiscal 2002 was 5,350,000 kWh, or 134% increase compared with fiscal 2001. The energy saving target for fiscal 2003 is a 1% reduction compared with fiscal 2002. To achieve this goal, measures are being taken against air leakage and heat discharge from facilities.

#### **TEC PRECISION, INC.**

Description of business:	: Production and assembly of mechanical components	
	Design and production of molds	
	Assembly of power supplies and harnesses for	
	electronic equipment	
Foundation:	April 1982	
Premises area:	Located on the Component Business Group premises	
Floor space:	1,928 m <sup>2</sup>	
Number of employees:	225 (as of March 31, 2003)	

#### **Environmental impact (Fiscal 2002)**

City water used:	1,260 m <sup>3</sup>
Water discharge to sewer:	1,260 m <sup>3</sup>
Electricity consumption:	2,250,000 kWh



Waste separation in the workplace



Lead-free soldering equipment



#### Main products





Plastic lens





Mold

Voluntary action plan implementations

### Zero emissions of waste

TEC PRECISION achieved zero emissions of waste (recycling ratio of 99.9%) in fiscal 2000. Some expenditure was required to dispose of hard plastic waste. Thorough separation of waste by material allowed TEC PRECISION to sell some separated materials as raw materials.

# FUJIKEN CO., LTD.

FUJIKEN offers high performance and high reliability products, based on its expertise in capacitor manufacturing, cultivated over more than a half century. By changing wet capacitors to dry capacitors, downsizing and energy saving are achieved to substantially reduce environmental impacts from the manufacturing process.

As awareness about prohibited or separate smoking has been raised, FUJIKEN produces air cleaners and develops minus ion generators to offer solutions for conformable environments.

#### **Characteristic activities**

#### **Environmental equipment**

Air cleaners to help create a comfortable space are playing an active part in offices, with the smoke deodorizing and separating system, comprised of discharge-type photocatalysis deodorization and needle electrode discharging ion charger/ dust collector.

FUJIKEN also developed corona discharge type ion generators, which restrict ozone generation and effectively generate minus ions.

\* Discharge-type photocatalysis deodorization and needle electrode discharging ion charger/dust collector: Oxygen is separated from the ozone by the filter. The oxidation resolves odor and formaldehyde, removes or deactivates airborne microbes. Positively charged floating dusts adhered to the negative plate for dust collection.

#### Water/air pollution monitoring

The quality of rainwater and well water on the premises is inspected monthly. Air discharge from the ventilating fans is checked biannually. The analysis results are reported to the Kan-nami Town Office.

#### **Energy saving**

The power consumption in fiscal 2002 is 895,000 kWh, approx. 60% decreasing from fiscal 1990. The great contributor is the reduction of heat sources, including temperature chambers and kilns used to manufacture wet capacitors, which dry capacitors replaced.

#### Reduction of chemical substance discharge

The above capacitor change reduced the use of oil, solvents and other chemical substances by approx. 60%, substantially reducing environmental risks. Shizuoka Labor Bureau gave FUJIKEN a prize for efforts made especially for occupational hygiene regarding hazardous tasks. In fiscal 2003, lead-free soldering equipment will be introduced in order to further eliminate environmental risks.



#### Profile

Description of business:	Development, production and sales of	
	environmental equipment, capacitors	
	and electronic equipments	
Foundation:	October 1951	
Capital:	80 million yen	
Number of employees:	88 (as of March 31, 2003)	

#### **Environmental impact (Fiscal 2002)**

City water/well water used:	4,300 m <sup>3</sup>
Electricity consumption:	895,000 kWh
Waste discharge:	7.2 tons
Chemical substances discharge:	683 kg
(TOSHIBA Group's restricted substances)	

#### Main product



FO-2000 air cleaner





# **TOSEI DENKI CO., LTD.**

TOSEI DENKI swears, in its environmental policy, to hand down the natural environment to the next generation in a sound state and protect the irreplaceable global environment. TOSEI DENKI believes the incorporation of this policy into the environmental activities and the compliance with the laws and regulations will lead to the environmental protection.

During fiscal 2003, TOSEI DENKI will reinforce the environment management promotion system, including commitments to energy saving and waste reduction, aiming at being accredited with ISO 14001 in July 2004.

TOSEI DENKI will move forward with further developments of ECPs, to ensure its position as one of the leading companies of the industry.

#### **Environmental policy**

東静電気株式会社環境基本方針
(理念) 東静電気株式会社は、富士箱根・伊豆国立公園内に位置し、"狩野川 の清流と緑豊かな郷"の中で地域住民と共存している。この環境を健 全な状態で次世代に引継ぎ、"かけがえのない地球環境"を守ること が、21世紀に向けた企業の基本的責務との認識に立って、経営理念及 び経営方針に基づき行動する。また、環境保全への取組みを経営の最 重要課題の一つとして位置づける。
<ul> <li>(基本方針)</li> <li>(1) 当社は業務用クリーニング機械をはじめ真空蒸留機など、製品の開発、設計、製造、サービスの事業活動を行っている。これらによる環境に対する影響の大きい項目に関しては、技術的・経済的に可能な範囲で、全階層において環境負荷の低減に関する目的・目標を設定し実行する。</li> <li>目的・目標は定期的に見直すとともに、環境マネジメントシスティの感覚性状でを回る。</li> </ul>
<ul> <li>(2)優れた環境技術を有する製品を開発・提供し、広域的な汚染の予防と、地球環境の保全に努め社会に貢献する。</li> <li>(3)環境保全に関する法令・条例及び当社として受入を決めた要求事項の遵守は勿論のこと、社内規定や自主基準を制定し遵守する。</li> </ul>
<ul> <li>(4) 土壌及び水質の汚染を未然に防止するため、洗浄機械からの溶剤 や塗装施設からの塗料について、土壌飛散防止に取組む。</li> <li>(5) 敷地周辺に及ぶ、騒音・振動及び塗装粉じんを抑え、近隣社会の 生活環境の保全を図る。</li> <li>(6) 地球環境保全のため、廃プラスチックや特別管理産業廃棄物を基</li> </ul>
本とする、廃棄物の分別と保全管理に取組む。 (7) 地球資源の有限性を認識し、省エネルギー(電力)・省資源・廃 棄物の減量とリサイクルに、当社の全領域で取組む。省エネルギ ーと廃棄物は削減目標を決めて、これを実行する。 (8) 計員の環境保全音識を言提するため、全員に対する数章及び広報
<ul> <li>(6) 正員の決決(大主意)((1)) (1)) (1)) (1)) (1)) (1)) (1)) (1</li></ul>
平成14年5月28日 東静電気株式会社 代表取締役社長松永秀隆

TOSEI DENKI completely separated waste at each workplace and reduced the total waste discharge. Targeting on zero emissions of waste, TOSEI DENKI will review waste separation categories and further reduce waste on a continuous basis.



#### **Profile**

Description of business:	Production and sales of cleaning
	machines for business use, vacuum
	packing machines, washers for
	industrial components
Foundation:	April 1948
Capital:	233.38 million yen
Number of employees:	204 (as of March 31, 2003)

#### **Environmental impact (Fiscal 2002)**

City water used:	8,239 m <sup>3</sup>	
Water discharge to sewer:	8,239 m <sup>3</sup>	
Electricity consumption:	1,870,000 kWh	
Waste discharge:	10.7 tons	
Chemical substances discharge: 6,150 kg		
(TOSHIBA Group's restricted substances)		

#### Main products







# TEC KASHIYA DENKI CO., LTD.

TEC KASHIYA DENKI is conducting environmental activities under the same system as the Mishima Business Center.

The plant, standing in Kan-nami Town adjacent to Mishima, manufactures consumables for facsimile machines and printers, and provides field repairs. The "Reuse" business started in fiscal 2000 to collect, disassemble, clean, reassemble, and supply facsimile machines' process units on a nation-wide basis.

#### **Characteristic activities**

#### ISO 14001 certification in extended audit

As one division of the TOSHIBA TEC Mishima Business Center, the head office and the Kashiya Plant were ISO 14001certified in February 2003. TEC KASHIYA improves environmental activities on a continuous basis.

#### **Reuse business**

TEC KASHIYA established the circulation system for facsimile machine's process units to supply recycled ones to the market, and started the collection of the PK-04 process units for end-of-use TOSHIBA facsimile machines in December 2002.

The ratio of recycled process units to new process units is approx. 60% in fiscal 2002.

#### **Energy saving (Kashiya Plant)**

The power consumption at the Kashiya Plant in fiscal 2002 was 257,000 kWh. 24% of the power consumption were used for air conditioning and lighting. Thus, the reduction of energy used remarkably depends on how to control the working environment.

TEC KASHIYA prescribed and strictly followed the controlling standards according to work operations, and improved the efficiency while maintaining a comfortable working environment.

#### Efforts for zero emissions of waste (Kashiya Plant)

The recycling ratio in fiscal 2002 was 92.2%, failing to achieve zero emissions of waste. TEC KASHIYA is surging forward with analysis and complete separation of waste materials to reduce waste.



#### Profile

Description of business:	Development, production and sales of
	environmental equipment, capacitors
	and electronic equipments
Foundation:	October 1974
Capital:	3.6 million yen
Number of employees:	103 (as of March 31, 2003)

#### **Environmental impact (Fiscal 2002)**

City water used:	1,134 m <sup>3</sup>
Water discharge to sewer:	1,134 m <sup>3</sup>
Electricity consumption:	257,000 kWh
Waste discharge:	2.8 tons
Chemical substances discharge:	0 kg
(TOSHIBA Group's restricted substances)	

#### Reuse business overview



# Logistics



The TOSHOBA TEC products are transported throughout Japan and on a worldwide basis, through various means. TOSHIBA TEC is improving transportation efficiency, and striving to reduce packaging materials in mass, change the packing materials and use container transportation, which does not require packing.

# **Returnable container package for copiers**

The copier business division is making efforts to reuse product packages. The packing for remanufactured (RM) machines for the domestic market was changed from "one-way" package using corrugated cardboard and pallet, to returnable container package, enabling zero emissions of packing waste after unpacking and allowing easier delivery operations.

# Improved transportation of checkout counters

TOSHIBA TEC improved the transportation means for

checkout counters, to achieve zero emissions of waste. The checkout counters used in supermarkets and convenience stores were conventionally



packed with corrugated cardboard, and the cardboard and plastic bags became waste. With the cooperation of transportation companies and customers, TOSHIBA TEC used thick sheets to cover the counter, allowing the time required for packing to be shortened and the packing material to be extremely reduced. The sheets can be collected and reused, which contributes to saving resources.





Before improvement

After improvement

# Implementation of small-lot package-less consolidated transportation

Returnable container package for copier

In addition to package-less transportation for mass merchandisers, packageless transportation for small -lot customers is implemented using cargotainers.

By transporting the products set up in the plant on the cargotainer, mixed shipment is available.





# **Retail Information Systems Company**

The Retail Information Systems Company put the ST-98 POS Terminal into the market, aiming at building a continuously recirculating society. This POS terminal is an environmentally conscious product complying with the industry's top-level voluntary environmental standard.



#### 3R design

In addition to the conventional Recycle design, the Company is striving for Reduce design and Reuse design.

#### Reduce

Approx. 10% of the total mass was reduced compared with the conventional models, by using a small body having a width of only 314 mm and thin wall design through optimizing body strength.



The use of the electronic journal

system and the abolishment of the journal printer realized substantial reduction of paper rolls used.

#### Reuse

The Company proceeds with the maximization of diverting and standardizing parts used in conventional products, which ensures design considerations for reuse, over the generations.

#### Recycle

The Company is expanding the use of recycled materials, by changing the cushioning materials to pulp mold made of recycled materials or corrugated cardboard, and by using recycled paper for manuals. As for products' main bodies, plastic parts having a mass of 25 g or more are provided with the indication of material names, in order to improve recyclability. Grade indication is also provided with as many parts as possible. To facilitate disassembly for reuse and recycling, the Company changes the dismantling method and standardizes the parts.

#### Saving energy

For the purpose of saving energy, the POS terminals are equipped with the remote power control (RPC) function, which enables the store controller to provide ON/OFF control over the terminal and prevent unnecessary operations. Approx. 15% reduction in power consumption per function is achieved, compared to previous models.

• Reducing environment-related chemical substances By performing green procurement at the raw material procurement stage, the environment-related chemical substances contained in the products, having environmental impacts, are reduced.

#### **Reducing lead**

Lead-free soldering has been used for the POS terminals, starting with the M-6800, in 2001. All components are mounted on the in-house manufactured printed circuit boards for the ST-98, with lead-free soldering. The Company's comprehensive commitments to lead reduction contain the use of lead-free internal wiring harnesses and power cords.



Lead-free soldered printed circuit board

#### Using chromium-free steel plates

To reduce hexavalent chromium, which is one of the restricted substances by the RoHS Directives, the Company uses chromium-free steel plates on a fullscale basis.

#### Using halogen-free printed circuit boards

The Company has started to use halogen-free printed circuit boards, and will expand the use.



Halogen-free printed circuit board



#### **Document Processing & Telecommunication Systems Company**

The Document Processing & Telecommunication Systems Company has been moving forward with the 3R design in the development of the e-STUDIO810 high speed MFP, the e-STUDIO210c/310c high speed full-color MFP and the COPIX TF-3200 super G3 facsimile machine for business use.

The Company has created environmentally conscious products, designed to consume less energy, containing less environment-related substances, etc.

#### 3R design

The 3R design considerations for the e-STUDIO810 MFP contain unit design, ease of disassembly, and ease of removing parts to be reused.

#### Reduce

Since the machine body is made compact and lightweight, the mass and the installation space are reduced by approx. 15% and by approx. 21%, respectively, compared with the conventional e-STUDIO805.

#### Reuse

By using the new developing engine, which employs the TOSHIBA TEC's Toner Recycling System, approx. 90% of residual toner are collected in the developing engine and mixed with new toner for the purpose of reuse. Thus, MFP running with high recyclability is achieved. Standardization and reuse of parts are also considered at the design stage.

#### Recycle

The Company reduces parts which are difficult to be recycled.

#### Saving energy

The e-STUDIO810 operates smoothly and efficiently, with less power. Its Twin IH (induction heating) fuser technology uses twin coils to minimize heat loss and reduce warm-up energy. As a result the e-STUDIO810 achieves energy consumption of 344 Wh/h and satisfies the fiscal 2006 target criterion of 369 Wh/h determined by the Law Concerning the Rational Use of Energy.

The warm-up time is also reduced by approx. 62%, compared with the conventional e-STUDIO805.



e-STUDIO810 high speed MFP

The energy-saving design allowed the COPIX TF-3200 super G3 facsimile machine for business use to only require 1.4 W in standby mode. The previous models always required 11 W even when no transmission or reception was performed. This product complies with the requirements of the International ENERGY STAR Program and the Law on Promoting Green Purchasing.



The COPIX TF-3200 was the first-in-the-industry facsimile machine certified to the ECO LEAF labeling program, which allows information regarding environmental impacts during the product's life cycle to be publicly accessible, as quantitative data.



COPIX TF-3200 super G3 facsimile machine for business use

#### Reducing environment-related chemical substances

The Company is striving for lead-free, chromium-free, and halogen-free design and development. Remarkable reduction of such chemical substances is achieved on the e-STUDIO210c/310c high-speed full-color MFP.

Lead-free soldering and halogen-free substrate are applied to 88% (in mass) and 90% (in area) respectively, of the printed circuit boards in-house manufactured. The use of halogen is abolished on the covers. As for plated steel plates and screws, hexavalent chromium plating is reduced.



e-STUDIO210c/310c high-speed full-color MFP



# **Home Electric Appliances Group**

The following describes the environmentally conscious manufacturing of vacuum cleaners.

#### 3R design

#### **AERO CYCLONE** for saving resources

The Group started to use the MAGIC CYCLONE system, which did not require a dust bag, in 2001. The VC-R12C vacuum cleaner released in February 2003 uses the AERO CYCLONE system, which controls two airflows inside the cleaner; straight

and circulating, to provide high efficiency in dust collection, in spite of the compact body.

#### Saving energy

#### Reduction of standby power

The VC-P10X cordless vacuum cleaner, released in September 2002, consumed power of approx. 0.4 W in standby mode, achieving the design target of less than 1 W (approx. 78% reduction, compared with the previous model).

#### Improving suction performance

Recognizing high efficiency in dust collection realizes energy saving, the Group develops vacuum cleaners having excellent suction performance.

The VC-R12C AERO CYCLONE

is the industry's first vacuum cleaner VC-R12C vacuum cleaner that has achieved the maximum suction work ratio of 500 W, using the CYCLONE system (approx. 22% improvement compared with the previous model).

VC-P10X vacuum cleaner



# Reducing environment-related chemical substances Expansion of lead-free soldering

The Group started to use lead-free soldering for vacuum cleaners for the domestic market, in January 2001.

The VC-R6D vacuum cleaner, released in February 2003, is the first model for the overseas market, that uses lead-free soldering. The Group is striving to expand the application of lead-free soldering to all vacuum cleaners.





VC-R6D vacuum cleaner

Printed circuit board

#### Using chromium-free steel plates

The Group started to use chromium-free steel plates for part of the vacuum cleaner motor frame, in November 2002 and will expand the use.



Vacuum cleaner motor

Motor frame

#### Other environmental considerations

The following environmental considerations are incorporated into the VC-R12C vacuum cleaner.



For Offering Environmentally Conscious Products

# **Environmentally Conscious Products**

**Eco Mark** 

at present.



TOSHIBA TEC notifies people all over the world that environmental considerations are provided to its products by obtaining approval for the use of typical environmental labels.

## Environmental labeling (Type I):

Labeling requiring certification by a third party organization

#### International ENERGY STAR® Program Standby power makes up most power consumed

by OA equipment (personal computers, display,

printers, copiers and facsimile machines). The

ENERGY STAR label can be attached to OA

equipment whose standby power consumption is

less than the prescribed criteria. This program has

been implemented as an optional registration

system certified with both the Japanese and US

governments, since October 1995. TOSHIBA

TEC participate in the International ENERGY STAR

Program, and presently 108 models of the printers,

facsimile machines and copiers comply with

the criteria.

The Eco Mark is a Japanese representative environmental label established by the

Japan Environment Association. It is attached to products, which are judged to generate less environmental impacts from the production to disposal stages and to be useful for environmental protection. Five models of the TOSHIBA TEC copiers are certified



**Overseas Environmental Labeling** The TOSHIBA TEC's copiers and MFPs comply with the Blue Angel Mark (Germany's environmental labeling) and the Chinese environmental labeling program (HJDZ40-2000).



Blue Angel Mark

Chinese environmental label

# Environmental labeling (Type I):

Onerg

Labeling based on criteria that a company voluntarily sets up

Labeling based on consumers' judgment after disclosing environmental impact information

### **Toshiba Group Earth Protection Mark**

TOSHIBA TEC set up the voluntary environmental standards, which prescribed the industry's top-level requirements for environmental considerations for each product, and this mark appears in catalogs and on web site for the products in compliance with the standards.

Four models from the POS terminals, three models from the MFPs, one model each from the JIMCOM (office computer) and the bar code printer and four models from the electronic meeting boards are permitted to use this mark.

# Environmental labeling (Type II):

#### **ECO LEAF** labeling

The ECO LEAF labeling program started in June 2002. According to this program, the environmental impacts output from every stage covering raw materials procurement, manufacturing, transportation, usage, disposal and recycling, are calculated with LCA method. This label indicates the calculated environmental impacts as quantitative data. Three models of the copiers and one model of the facsimile machine were already certified.

The environmental impact data for the certified products are available on the Japan Environmental Management Association for Industry (JEMAI)'s web site (URL: http://www.jemai.or.jp).



No. AH-03-001 (COPIX TF-3200)





# **Collection and Recycling System for End-of-Use Products**

# **Retail information system products**

As one of the leading companies manufacturing and distributing POS terminals, the Retail Information Systems Company of TOSHIBA TEC established a system for collecting and recycling end-of-use products from customers. The system started full-scale operations in April 2002 one after another in main areas, and nationwide operations in October 2002.

#### **Collectiond and recycling system**



#### Features

- TOSHIBA TEC's branches or sales office in 54 areas are responsible for collecting end-of-use products from customers.
- $\cdot$  Any end-of-use retail equipment is collected, regardless of manufacturers.
- $\cdot$  TOSHIBA TEC facilitates the conclusion of an onerous contract with the customer who is to consign the product disposal to TOSHIBA TEC.
- Careful material separation through manual dismantling improves the resource recycling ratio (target: 90% or higher, including thermal recycling) and reduces waste.

#### **Recycling portable secondary batteries**

Rechargeable batteries are used in some products such as POS terminals, portable printers and cordless vacuum cleaners. They include nickel-cadmium batteries, nickel-hydrogen batteries, lithium-ion batteries and compact valve-regulated lead-acid storage batteries, that use cadmium, cobalt, nickel or lead as their main materials. To make effective use of precious resources, they need to be collected and recycled. TOSHIBA TEC is affiliated with the Portable Rechargeable Battery Recycling Center, collecting and recycling jointly. Approx. 16 tons of portable secondary batteries were collected for recycling in fiscal 2002.





# **Copiers and MFPs**

TOSHIBA TEC is promoting collection and recycling of copiers and MFPs in cooperation with its customers, TOSHIBA INFORMATION EQUIPMENTS CO., LTD., the sales company, and TERM CORP., the recycling firm.

In 1998, TOSHIBA TEC started the collection and recycling of used products in the Tokyo and Kanagawa areas, and expanded its geographic coverage to 9 bases throughout Japan by 2001.

To increase the efficiency of collection and recycling of products, TOSHIBA TEC is participating in the Recycled Equipment Exchange System of the Japan Business Machine and Information System Industries Association, where the used products of other manufacturers traded in by each manufacturer are brought together for mutual exchange. At the recycling site, the used products are manually dismantled into each material in order to facilitate the recycling.

## **Process unit of facsimile machines**

pan by 2001. d recycling of products, led Equipment Exchange ind Information System ts of other manufacturers ther for mutual exchange. nanually dismantled into ng. **Ie machines** 

TOSHIBA TEC is positively developing a reuse and recycling business for the process units of facsimile machines in the Japanese market. Consequently, the recycling system that collects used process units from the field, selects and recycles reusable parts and supplies them again to the market has been established. Recycled process units under strict quality control ensure quality similar to a new process unit and satisfy quality requirements from customers.



# **Copier re-manufacturing**

In April 2001, TOSHIBA TEC introduced the PREMAGE651RM to the Japanese market. This product is the first re-manufacturing (RM) digital copier in the industry, which has

achieved the reused parts ratio of 60% (in mass). Reuse of the parts is extremely effective for reducing environmental impacts. The PREMAGE651RM is an environmentally conscious product contributing to the establishment of a recycling-based society. Reused parts comply with the quality inspection criteria the same as for new parts.



Reused parts data	
Body mass	250 kg
Total mass of reused parts	Approx. 150 kg
Ratio of reused parts (in mass)	60% or more
Number of reused parts	Approx. 800
Main reused parts	Frame, wire harness, large-
	capacity paper cassette, printed
	circuit board, laser unit, etc.

#### PREMAGE651RM

Permitted to bear the International ENERGY STAR label.

#### France TOSHIBA TEC FRANCE IMAGING SYSTEMS S.A. (TEIS)

#### **Collecting and recycling toner containers**

TEIS collects end-of-use toner containers from customers in

order to recycle plastics. As the amount of collected toner containers are increasing, TEIS is surging forward with the installation of new toner-plastic separation equipment with higher performance.



Toner-plastic separation equipment

#### **Recycling end-of-use copiers**

TEIS started collecting and dismantling end-of-use copiers for the purpose of recycling, in 1995. The collection and dismantling system plays a role in facilitating the employment of people who are mentally or physically challenged, in cooperation with the local welfare associations.



Material separation on copier

#### Copier's printed circuit board (PCB) repair center

The copier's PCB repair center was established in TEIS in January 2003, to start repairing the PCBs for the five

e-STUDIO series models and the three ED series models. This new service is expected to reduce the quantity of purchased and discarded substrates for spare parts.



PCB repair center



Mr. Eric Labussière Manager, Environmental Protection TEIS

#### **Germany** TOSHIBA TEC GERMANY IMAGING SYSTEMS GmbH

A comprehensive part of the environmental protection program is the collection and recycling of spare parts and consumables. This program is implemented to effectively use the resources and reduce significant waste disposal. It has been expanded throughout Europe for all spare parts and consumables, including photo conductors, toner containers, fuser rollers and blades. In Germany, the end-of-use parts are collected by the dealers using special recycle boxes. The parts are brought together to the main sorting center in Germany and sorted according to how they are to be reused.

As an example, the fuser rollers are sent back to the roller manufacturer and are re-coated in a special process. Following a comprehensive quality control phase, the fuser rollers are delivered to the customers.



Facility to re-coat fuser rollers and shipment inspection

#### China TOSHIBA COPYING MACHINE (Shenzhen) CO., LTD. (TCOS)

TCOS was accredited with ISO 14001 in April 1999 and has been focusing on the enhancement of the environmental management system. As part of it, TCOS started to facilitate green procurement.



Field audit by the State Environmental Protection Administration at the TOSHIBA Shenzhen Plant

#### Encouraging suppliers to be ISO 14001-certifed

As planned in the implementation plan made in 2002, TCOS finished environmental audits on 60 suppliers. TCOS continues to provide suppliers, who have not yet established an environmental management system according to ISO 14001, with instructions, and encourage them to make improvements. 12 out of the 60 suppliers were already ISO 14001-certified. 30 suppliers will be accredited by the end of 2003. To reduce chemical substance discharge, TCOS is investigating environmental activities conducted by the plants and factories of all the suppliers.



# United States TOSHIBA AMERICA BUSINESS SOLUTIONS, INC. TONER PRODUCT DIVISION (TABS-TPD)

TABS-TPD employees have worked together since 1994 to reduce negative environmental impacts including recycling of white copy paper, corrugated cardboard, and copier toner containers with a goal of zero landfill. Environmental Management System accomplishments have included reduced energy consumption by installing new higher efficiency air compressors and a heating/cooling management system, installing a waste water filter press, and numerous noise and dust control projects.

#### **Raw material addition system**

Since 1999 TABS-TPD has been utilizing a raw material addition system to make batches of toner. The system is commonly referred to as the "AZO System" (named after the company that fabricated the system). The AZO System replaced a manual raw material addition system that required operators to hand weigh raw materials in a weigh booth with buckets while wearing Tyvek<sup>®</sup> coveralls and respirators. The manual system required 4 operators per shift to make blends, whereas the automated system

2nd level: Raw material feeders



requires 1 operator per shift.

Benefits of the AZO system since 1999 include:

- · Automatic validation of raw material type and weight
- $\cdot$  Saving 24 tons of raw materials from the landfill
- · Eliminated 150,000 forklift moves
- $\cdot$  Eliminated the need to perform 33,000 manual raw material lifts
- Eliminated the need for operators to climb 1.1 million stair steps, and walk 1,050 kilometers.
- · Labor cost saving
- Lowered employee risk for related injuries and employee exposure to raw material dust

#### Waste minimization

Waste minimization continues to be very important for environmental release reduction. Production waste primarily consists of unused raw materials. Waste of raw materials is a significant expense for our toner manufacturing business and creates a negative impact on the environment. TABS-TPD continuous improvement activities have allowed for a reduction in toner raw material waste from 340 tons in 1992 to 88 tons in 2002 (approx. 75% reduction).





TABS-TPD employees



# Voluntary environmental activities and communication with local community

TOSHIBA TEC joins local environmental protection activities. Each business site is growing communications with local communities through local activities and events.



Cleaning at Shibusawa station (Hadano)



Campaign against illegal dumping



Cleaning at Sakuragawa River

#### Ohito Business Center summer festival

The employees' families and the neighbors participated in the festival. They enjoyed children's traditional dances and songs, and a parade with a *mikoshi* (portable shrine).



#### Charity bazaar at Hadano Plant

The Hadano Plant holds a year-end charity bazaar. The proceeds from the bazaar are donated to welfare organizations, together with in-house contributions.



## Participation in overseas afforestation activity

On a voluntary basis, one employee from the Hadano Plant participated in the 9th Children's Forest Program (Malaysia) sponsored by the Japanese Electrical Electric & Information Union. The total number of participants was 1,500 to plant 10,000 seedings.



#### Participation in domestic afforestation activity

TOSHIBA TEC supports the headwaters forest conservation activities sponsored by Kanagawa Prefecture, and sent four employees from the Hadano Plant to the Kanagawa Workers' Afforestation Festival 2002, held at the Yadoriki Headwaters in the Tanzawa-Oyama Quasi-National Park.





Nittan Valve Co., Ltd. visiting the Hadano Plant to study the environmental protection activities

# Other

## Acceptance of site visits

Each business site opens their environmental management implementations to the public and accepts local companies' requests to visit.

### **Exhibitions**

Toshiba TEC exhibits the environmentally conscious products and equipment in exhibitions and events regarding environmental protection in order to introduce its activities to the public.

#### **Eco-Products 2002**

The Eco-Products 2002 was held at the Tokyo Big Sight in December 2002. TOSHIBA TEC introduced its environmentally conscious POS terminals, copiers and vacuum cleaners at the TOSHIBA Group's booth.



**12th TOSHIBA Environment Technology Exhibition** TOSHIBA TEC exhibited its products at the 12th TOSHIBA Environment Technology Exhibition. The

environmental technologies were explained in the sections for ECP and the collection/ recycling of endof-use products.



# **3rd Shizuoka Environment, Welfare and Technologies Exhibition**

TOSHIBA TEC exhibited its waste disposal equipment at the 3rd Shizuoka Environment, Welfare and Technologies Exhibition 2001, held on September 2002, in Twin Messe Shizuoka.

Since the Ohito Business Center and the Mishima

Business Center are located in Shizuoka Prefecture, the TOSHIBA TEC booth welcomed a large number of visitors.



### **Other information**

#### **Ozone depleting substances control**

TOSHIBA TEC is committed to reducing the use of ozone depleting substances, and abolished the use of chlorofluorocarbons (CFCs) and 1.1.1-trichloroethane. TOSHIBA TEC checks whether there is any leakage of coolant gas, and properly collects/treats gases, when disposing of equipment including air conditioners.



#### Efforts to preventing global warming

In addition to various environmental events, the no-car day campaign is implemented at each business site. On these days, the employees are restrained from commuting by car.





#### Donations

The employees donate a potion of their salaries and bonuses to the Social Contribution Fund. Every year on the anniversary of the corporation, these contributions are given to the local



social welfare and environmental protection organizations, along with a corporate contribution.





#### TOSHIBA TEC Group's PRTR data for individual business sites (Unit: t/year)

Data on each business site started to be opened to the public this year, according to the PRTR Law. On this page, data on all business sites of TOSHIBA TEC and subsidiary production companies are shown. The law mandates reporting of substances whose consumption is 5 tons or more per year and of specified Class I Chemical Substances whose amount handled is 0.5 tons or more per year, to the governors. The following data contains any substances whose amount handled is 0.01 ton or more per year.

	Substance			Amount	Amount re		released		Total amount	Amount transferred		Total amount	Amount	Mount	Amount
Site	specified by	Substance name	CAS number	handled	Release to	Release to public	Release	Landfill within	released	Transfer as	Transfer to	transferred	consumed	removed and	recycled
	the law				atmosphere	water systems	to soil	operations		waste	sewage			treated	
Ohito Business Center	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
M	30	Polycondensate of 4,4'-isopropylidenediphenol	25068-38-6	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
shim		and 1-chloro-2,3-epoxypropane													
ia Bu	227	Toluene	108-88-3	0.05	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
r sine	230	Lead and its compounds	-	0.13	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.12	0.00	0.00
SS	232	Nickel compounds	-	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.00
	30	Polycondensate of 4,4'-isopropylidenediphenol	25068-38-6	5.19	0.26	0.00	0.00	0.00	0.26	0.00	0.00	0.00	4.90	0.00	0.03
-		and 1-chloro-2,3-epoxypropane													
Had	198	1,3,5,7-tetraazatricyclo	100-97-0	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.04
land		[3.3.1.1(3,7)] decane													
P	230	Lead and its compounds	-	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.01
ant	266	Phenol	108-95-2	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.01
	272	Bis(2-ethylheyl) phthalate	117-81-7	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	304	Boron and its compounds	-	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.03
Ц	30	Polycondensate of 4,4'-isopropylidenediphenol	25068-38-6	11.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.22	10.78	0.00	0.00
		and 1-chloro-2,3-epoxypropane													
Ā	202	Tetrahydromethylphthalic anhydride	11070-44-3	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
2	230	Lead and its compounds	-	0.27	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.25	0.00	0.01
	40	Ethylebenzene	100-41-4	1.24	1.04	0.00	0.00	0.00	1.04	0.20	0.00	0.20	0.00	0.00	0.00
ő	44	Ethylene glycol monoethyl ether	119-80-5	1.17	1.00	0.00	0.00	0.00	1.00	0.17	0.00	0.17	0.00	0.00	0.00
Ĕ	63	Xylene	1330-20-7	2.72	2.43	0.00	0.00	0.00	2.43	0.29	0.00	0.29	0.00	0.00	0.00
DE	224	1,3,5-trimethylbenzene	108-67-8	0.12	0.09	0.00	0.00	0.00	0.09	0.03	0.00	0.03	0.00	0.00	0.00
NK	227	Toluene	108-88-3	2.26	1.57	0.00	0.00	0.00	1.57	0.69	0.00	0.69	0.00	0.00	0.00
_	270	Di-n-buthyl phthalate	84-74-2	0.02	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00

#### Other environmental data

#### Environmental impact data

0.4	L K	Emissions to air (kg)			Emissions to water (kg)								
Site	Location	Flyash	NO <sub>x</sub>	SOx	BOD	SS	Copper	Zinc	Dissolved iron	Dissolved manganese	Total chromium	Fluorine	Total nitrogen
Ohito Business Center	Ohito, Ohito-cho, Tagata-gun, Shizuoka-ken	0.6	21.6	8.3	2.3	2.8	1.3	-	-	-	-	—	-
Mishima Business Center	Minami-cho, Mishima-shi, Shizuoka-ken	0	0	0	95.2	44.6	3.0	5.9	11.9	5.9	3.0	3.0	-
Hadano Plant	Horiyamashita, Hadano-shi, Kanagawa-ken	145.0	194.8	194.8	7.2	10.0	—	-	-	-	-	—	-
FUJIKEN	Tukamoto, Kan-nami cho, Tagata-gun, Shisuoka-ken	-	-	-	-	-	_	0.3	-	-	-	-	-
TOSEI DENKI	Kamishima, Ohito-cho, Tagata-gun, Shizuoka-ken	-	-	-	20.6	13.2	0.0	0.2	0.2	-	6.9		-

#### Poly chlorinated biphenyl (PCB) storage (No. of units)

Cite	High-voltage capacito	r for power conversion	Ballast for fluorescent lamp			
Site	Storage Operating		Storage	Operating		
Ohito Business Center	12	0	191	1,758		
Mishima Business Center	14	0	99,999	0		
Hadano Plant	0	0	0	0		
FUJIKEN	2	1	6,200	0		
TOSEI DENKI	1	0	0	0		

#### Environmental investments ( ¥thousand)

Site	Air	Water quality	Soil	Noise and vibration	Energy-saving measures	Waste disposal	Research and development	Contribution to local community	Administration and others
Ohito Business Center	0	675	0	0	27,790	3,880	1,835	3,640	1,835
Mishima Business Center	1	8,200	0	13,640	87,303	3,793	0	0	0
Hadano Plant	0	0	0	0	88	232	0	0	3,220
FUJIKEN	0	270	0	0	0	0	0	1,700	0
TOSEI DENKI	0	0	0	0	8,213	0	0	0	0

\* Data on the Component Business Group and TEC PRECISION are contained in data on the Ohito Business Center. Data on TEC KASHIYA are contained in data on the Mishima Business Center.

#### Environmental impacts at overseas production bases

	Location	Power consumed	Water consumed	Water discharge		Environmental acco	ounting ( ¥ thousand)	Disposal (t)		
Site		(Thousand kW/h)	(m³)	(m <sup>3</sup> )	water discharged to	Environmental investment	Environmental expenditure	Recycling	Landfill	
TSE	Singapore	4,490	10,490	10,490	Sewer	0	7,099	18.5	75.0	
TIM	Malaysia	2,890	42,700	42,700	Rivers and sewer	0	19,172	15.7	72.7	
TEIS	France	1,1650	3,535	3,535	Sewer	2,860	20,259	733.6	41.7	
TCOS	China	5,010	260,675	260,675	Rivers and sewer	3,250	3,160	145.0	122.2	



#### **Environmental laws and regulations and** environmental communication

Violations:	None
External environment-related accidents:	None
Internal environment-related accidents (abnormality	): 2
(For details, see the [Accidents] b	elow.)
External environment-related complaints:	None
Internal environment-related complaints:	None
Penalty/fine:	None
Soil pollution newly discovered:	None
Environmental lawsuits:	None

#### [Accidents]

#### Oil leak from transporter's truck

When waste was loaded into the truck, the hydraulic hose of the crane cracked, causing approx. 1 litter of hydraulic oil to leak onto the road on the premises. The oil was removed using



oil absorbing sheets and agent.

#### Fuel leak from parts supplier's truck

#### March 6, 2003

Fuel leaked from the parts supplier's truck was found in the parking lot and on the passage of the premises. Immediately after the finding, TOSHIBA TEC collected

the fuel, requested the driver to take appropriate actions, and checked the leak status on the roads. However, no action could be taken for the public thoroughfares, since it was raining.



Fuel collection

Next version The 2004 issue will be published in August 2004.

#### **Cover illustration**

The symbols of nature - the leaf. water and flower - are used as motifs. On these images, words "clean," "ecology," "amenity" and "safety" are arranged. This illustration alludes to TOSHIBA TEC's commitments to preserve the nature or the environment. The four motifs indicate this report is the fourth issue.

The TOSHIBA TEC's website is accessible on: URL: http://www.toshibatec.co.jp For inquiries, please contact: Environmental Protection & Safety Group **Production Division TOSHIBA TEC Corporation** Kandabashi Yasuda Bldg. 1-1 Kanda Nishiki-cho, Chiyoda-ku, Tokyo, 101-8442 Japan Phone: +81-3-3292-4859 Fax: +81-3-3292-4509 e-mail: environment@toshibatec.co.jp

#### Items complying with the Environmental Reporting Guidelines (Fiscal Year 2000 Version) issued by the Ministry of the Environment

	ltem	Pages		
1.	CEO's statement	1		
2.	Foundation of reporting	Back of the cover, 53		
3.	Summary of the nature of the business	3		
4.	Business policies and posture	2, 4, 5, 30, 32, 34, 36,		
	regarding environmental conservation	38 to 40		
5.	Summary of policies, targets, and	6, 11, 16		
	achievements in environmental conservation			
6.	Summary of environmental accounting information	14 to 16		
7.	State of environmental	4, 5, 12, 13, 20 to 22		
	management system			
	State of research and development of technologies for	24 to 27, 42 to 44		
8.	environmental conservation and environment-conscious			
	product/services (Design for the Environment [DfE])			
9.	State of the disclosure of environmental	24, 45, 50, 51		
	information and environmental communication			
10.	State of compliance with environmental regulations	52, 53		
11.	State of social contribution related to environment	50, 51		
12.	A complete picture of environmental burdens	6 to 11		
13.	State of environmental burdens	6, 7, 16, 18, 19, 30 to		
	from material/energy input, and	40, 46, 47, 52		
	mitigation measures			
14.	State of environmental burdens at the	24, 28, 29, 45		
	upstream (purchase of products/services),			
	and mitigation measures			
15.	State of environmental burden from output	6, 8 to 11, 16, 17, 19,		
	of refuses, and mitigation measures	30 to 40, 46, 47, 52		
16.	State of environmental burdens at the	42 to 47		
	downstream (providing products/services),			
	and mitigation measures			
17.	State of environmental burdens from	9, 41		
	transportation, and mitigation measures			
18.	State of environmental burdens from cumulative soil	16, 17, 53		
	contamination, land utilization and other environmental			
	risks, and mitigation measures			

Please feel free to call, fax, or e-mail for inquiries or questions.



# TOSHIBA TEC CORPORATION

# **Environmental Protection & Safety Group**

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Soy ink used



Printed on 100% recycled paper