CASIO

For a Sustainable Society

Environmental Report 2003

clean & green

2003

CONTENTS

Editorial Policy

- This Environmental Report 2003 was prepared in compliance with the Ministry of the Environment's Environmental Report Guidelines (2000 edition) and with reference to the Sustainability Reporting Guidelines 2002 of the Global Reporting Initiative. (The GRI is a voluntary organization established in 1997 to prepare guidelines for reporting about sustainability in terms of the environment, the economy, and society in general.)
- As features distinguishing this environmental report from its previous edition, the following information is newly included:
  - Corporate message towards a sustainable society addressed in the form of a discussion among senior management P5–8;
  - Information about the introduction of environmental management indicators in Casio's environmental accounting P15–16;
  - Comparison of the environmental impact of watches made though a life cycle assessment (LCA) P20;
  - Environmental measures taken related with overseas distribution P22;
  - Norms for achieving the company's management philosophy (Charter of Creativity for Casio and Casio Code of Conduct) P25;
  - Specific information concerning major overseas sites P31.
- In response to the results of the questionnaire on last fiscal year's report, this report employs a greater number of figures, tables, and images to make the articles more easily comprehensible.
- The report explains the Casio Group's business activities and environmental aspects, describes the group-wide environmental philosophy, environmental policies, institutions, Environmental Action Plan, and other environmental management efforts to reduce the impact of the group on the environment, and presents the achievements of individual initiatives.
- For detailed information supplementing this report, including performance data, please refer to the Casio Computer Co., Ltd. Web site at: www.casio.co.jp/env/
- To facilitate two-way communication with readers and provide information, the back cover provides further contact information and our website URL.

Period and Scope

- This Environmental Report 2003 mainly summarizes the Casio Group's environmental conservation activities conducted during fiscal 2002 (April 1, 2002 to March 31, 2003).
- Environmental impact data provided in this report concerns both the Casio Group's domestic sites and overseas sites. For domestic sites, all the sites are targeted except for sales-, service-, and information processing-related sites and most of the environmental impacts caused by them are covered. For overseas sites, environmental impact data collected at major sites are described.
- The Casio Computer Hachioji Laboratory is included in the Electronic Component Division, and the Head Office, the Hamura Research & Development Center, and the Tokyo Product Control and Technical Center are included in the Electronics Equipment Division.

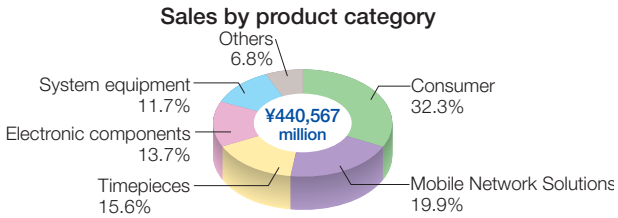
		Casio Group sites	Main businesses	Number of sites
Domestic	Electronic Component Division	Hachioji Laboratory, Casio Computer Co., Ltd.	Research and Development for electronic devices (LCDs, etc.)	1
		Kofu Casio Co., Ltd.	Manufacture of electronic calculators, mobile information devices, and LCD devices	2
		Kochi Casio Co., Ltd.	Development and manufacturing of liquid crystals and other electronic devices	1
		Casio Micronics Co., Ltd.	Manufacturing and sales of electronic devices	2
	Electronics Equipment Division	Head Office, Casio Computer Co., Ltd.	Head office functions	1
		Tokyo Product Control and Technical Center, Casio Computer Co., Ltd.	Development, design, and procurement for system equipment	1
		Hamura Research & Development Center, Casio Computer Co., Ltd.	Development, design, and procurement for digital cameras, electronic timepieces, cellular phones, and other products	1
		Yamagata Casio Co., Ltd.	Manufacturing of electronic timepieces, digital cameras, communications equipment, and other products	2
		Casio Electronic Manufacturing Co., Ltd.	Manufacturing of page printers	1
		Casio Support System Co., Ltd.*2	Refurbishing and sales of electronic calculators and other electronic equipment	5
		Casio Techno Co., Ltd.	Repair, sales, and maintenance of equipment and other electronic equipment	1
		CCP Co., Ltd.	Manufacturing and sales of toys and sundry goods	1
Overseas*1	Electronics Equipment Division	Casio Korea Co., Ltd.	Manufacturing of electronic timepieces	1
		Casio Taiwan Ltd.	Manufacturing of parts for electronic timepieces	1
		Jiu Shui Keng Casio Electronics Factory	Manufacturing and sales of electronic timepieces	1
		Casio Electronics (Zhuhai) Co., Ltd.	Manufacturing and sales of electronic musical instruments	1
		Casio Electronics (Zhongshan) Co., Ltd.	Manufacturing and sales of electronic calculators	1
		Casio (Thailand) Co., Ltd.	Manufacturing of electronic timepieces	1

*1. Overseas sites are not included in the Environmental Action Plan for energy conservation and waste reduction.
*2. Casio Refre Co., Ltd. changed its name to Casio Support System Co., Ltd. in fiscal 2002.

Corporate Data (as of March 31, 2003)

Registered name: Casio Computer Co., Ltd.
Established: June 1, 1957
Head office: 6-2, Hon-machi 1-chome, Shibuya-ku, Tokyo 151-8543, Japan
President: Kazuo Kashio
Paid-in capital: ¥41,549 million
Net sales: ¥440,567 million (consolidated)

Sales by product category



[Main lines of business]

Consumer: Electronic calculators, electronic stationery, electronic dictionaries, LDC TVs and other visual-related products, digital cameras, electronic musical instruments
Timepieces: Digital watches, analog watches, clocks
Mobile Network Solutions (MNS): PDAs, cellular phones, pocket computers, handheld terminals
System equipment: Electronic cash registers (including POS terminals), office computers, page printers
Electronic components: LCDs, BUMP processing consignments, TCP assembly and test processing consignments, carrier tapes
Others: Factory automation equipment, molds, toys, etc.
Number of employees: 3,371 (non-consolidated), 11,481 (consolidated)
Consolidated companies: 55 subsidiaries (domestic and overseas), 7 equity-method companies (domestic and overseas)

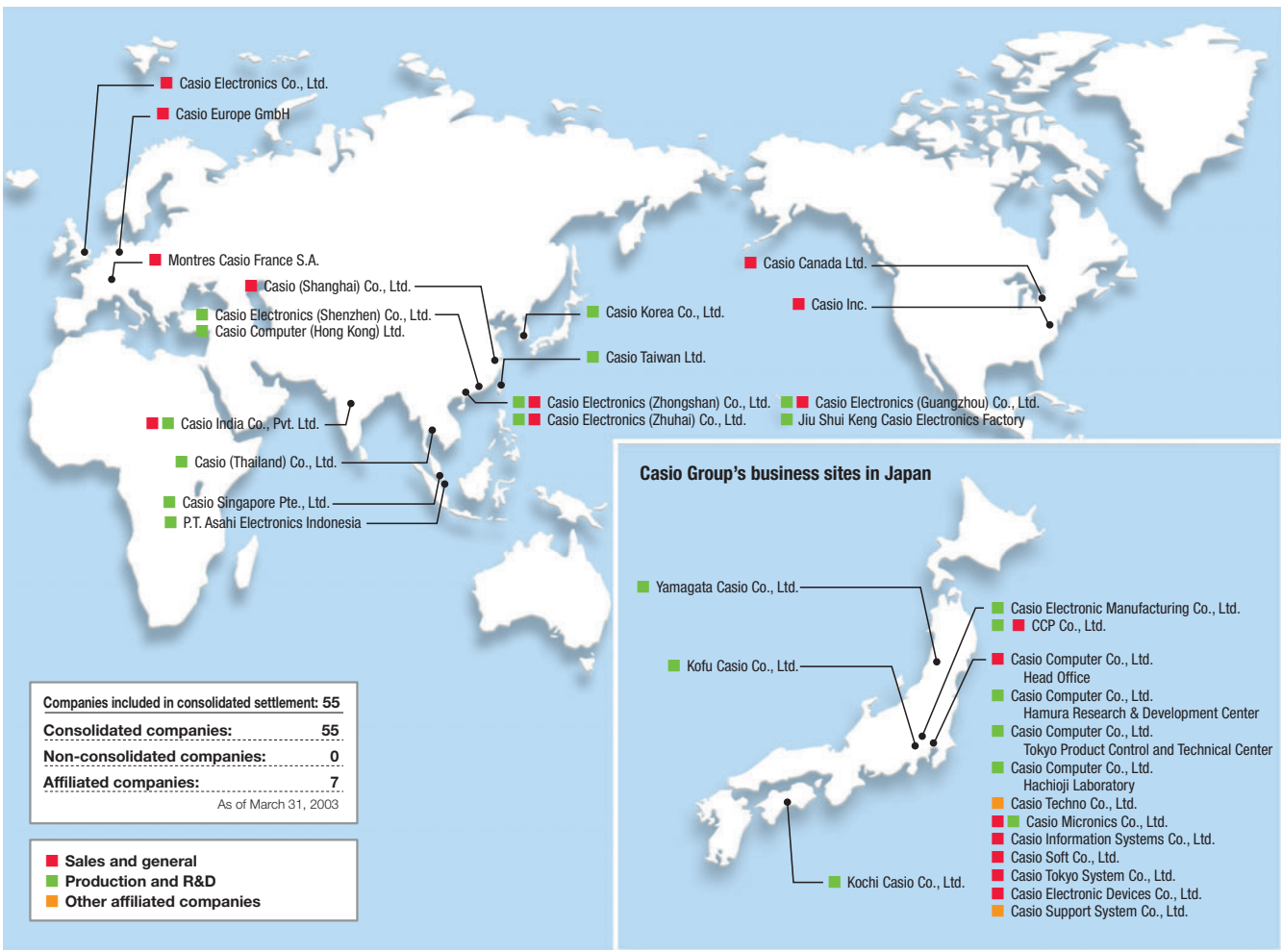
Casio Group Profile

Consolidated financial highlights

(Unit: ¥1 million)

	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
Net sales	502,012	451,141	410,338	443,930	382,154	440,567
Domestic	268,202	245,180	231,181	269,536	222,684	268,601
Overseas	233,810	205,961	179,157	174,394	159,470	171,966
Operating income	37,757	12,551	19,477	17,905	–10,418	17,914
Total assets	537,013	506,566	507,105	445,883	449,224	459,113
Shareholders' equity	182,657	170,721	169,634	162,375	134,317	131,957
Capital investment	53,824	31,212	35,546	30,278	15,737	11,168
Employees	18,668	17,269	19,325	18,119	14,670	11,481

Domestic and Overseas Sites



Top Commitment

For a Sustainable Society

With Japan's ratification of the Kyoto Protocol in June 2002, measures to prevent global warming, including the Clean Development Mechanism (CDM) and emission trading are now promoted at the national level, in addition to those implemented by the industry.

The Casio Group, as one member of our industry, has been implementing multifarious environmental conservation measures in order to fulfill its corporate responsibility towards the achievement of a sustainable society.

In the 6th Environmental Management Survey conducted last year by Nihon Keizai Shimbun, Inc., the Casio Group was ranked 19th among the 703 companies who provided answers to the survey questionnaire conducted targeting 2,047 manufacturing companies. We could achieve this because the Casio Group's advanced environmental conservation activities were highly esteemed. We are determined to implement further environmental measures on a continuous basis.

In fiscal 2002, we issued the 7th revision of the Casio Voluntary Plan for the Environment (CVPE), which shows the guidelines for environmental activities to be conducted at the following business stages within the Casio Group: development, design, manufacturing, distribution, repair services, and recovery/disposal. In compliance with these guidelines, we revised the environmental auditing sheet for product assessment, enhanced measures for energy conservation, resource saving, and for dealing with hazardous substances, and strengthened our standards for developing Green Products.

Towards the future computer- ubiquitous society, the Casio Group is expected to develop creative products that cannot be found in the product lines of other companies, taking advantage of its advanced technologies for promoting light weight, thin, short, compact and low power consumption as Casio's core competence. To meet expectations and contribute to the development of a sustainable society, I think it necessary for the Casio Group to continue manufacturing eco-compatible products as one of its social responsibilities.

The Environmental Report 2003 provides details and achievements about the Casio Group's environmental activities in fiscal 2002. I hope that the report will help as many readers as possible deepen their understanding about our efforts and thereby broaden the scope of our environmental efforts. We sincerely hope to receive our readers' frank opinions and comments on the report.

July 2003

Kazuo Kashio
President
樫尾和雄

Activities in Fiscal 2002 and Future Measures

In accordance with an increasing demand for Extended Producer Responsibility, companies are expected to meet ever more stringent and important environmental requirements, including the new environmental laws and regulations enacted both within and outside this country. In fiscal 2002, following Japan's ratification of the Kyoto Protocol, further global warming prevention measures were demanded and companies were required to take aggressive measures for environmental conservation. Companies are now expected to fulfill their social responsibilities and are evaluated in their environmental performance. To respond to such trends, the Casio Group revised its Environmental Action Plan "Clean & Green 21" Initiative and carried out activities in line with the revised plan. As a result, the following achievements have been realized.

Activities and results

For environmental activities related to products, efforts of the Divisions and the Development HQ led to the achievement of the fiscal year 2003 target (increasing the sales of Green Products to 30% of total sales of all Casio products) in fiscal 2002, a year earlier than planned. Accordingly, we updated the target to increase the rate to 50% of total sales by fiscal 2005. In fiscal 2002, we started full scale operations of the recovery and recycling system for information and communications devices, including office PCs, based on the law for Promotion of Effective Utilization of Recyclable Resources. For consumer devices, we started a recycling system for label printer tape cartridges recovered from general consumers, in addition to corporate customers.

For activities at our group companies, Casio Electronic Manufacturing achieved zero emissions in fiscal 2002, following the achievement by Kofu Casio (head office and Ichinomiya branch) and Casio Micronics (in Yamanashi) in fiscal 2001. As a result, a total of four companies have achieved zero emissions. For green procurement activities, we achieved a domestic procurement rate of 80.3% in fiscal 2002, against the fiscal 2003 target of 80%. We will therefore update the procurement targets to 95% by fiscal 2005 for domestic sites and to 85% for overseas sites.

Future measures

To comply with laws and regulations implemented in each country and to meet our corporate social responsibilities, we will contribute to environmental conservation through Casio products, strengthening the global environmental management basis for expanding environmental management activities at both domestic and overseas production and sales sites, and continue developing outstanding products for our customers. As major activities in fiscal 2003, we will promote measures to build a recovery and recycling system in compliance with the European WEEE and RoHS Directives, and to discontinue the use of hazardous substances through cooperation between the Head Office, Divisions and local agencies.

For mid-term activities, we will revise the Environmental Action Plan "Clean & Green 21" Initiative on a continuous basis in order to set better environmental objectives for products and the Group companies and further reduce the environmental impacts caused by the Casio Group. For details, please refer to the text of the Environmental Report 2003.

July 2003

Yukio Kashio
Executive Vice President
Chairman of the Casio Environmental Conservation Committee

樫尾幸雄

Discussions with Top Management

Developing Impressive Products to Delight Customers

Casio has been striving to develop light weight, thin, short, compact and low power consumption products based on its management philosophy of "Creation and Contribution." For Environmental Report 2003, Casio Computer's directors and the general manager of the Quality & Environment Center held a meeting, inviting Tsutomu Iijima, a representative of the Association for Environmental Planners, an environmental NGO, to discuss Casio products and act as the coordinator of the talks. They exchanged opinions about third parties' expectations for and ideas about Casio.

Starting point of the development of Casio products: light weight, thin, short, compact and low power consumption

Iijima: Recently, every manufacturing company is required to pay attention to the environment in its corporate activities. I believe that Casio is an advanced company in that it has always aimed to make light weight, thin, short, compact and low power consumption products in its manufacturing, which eventually leads to energy conservation and resource saving. General consumers, however, do not usually associate the concept of light weight, thin, short, compact and low power consumption with the environment. Through this discussion session, I expect you to develop further discussions to help everyone understand more about this issue.

Yukio Kashio, Executive Vice President

Firstly, let's talk about the world's first pure electric, small calculator developed in 1957. At that time, mechanical calculators made in the Unite States were dominant, and compared with them, the calculator was much smaller. What responses were made to the product?

Kashio: At that time, calculators for general office use were mechanical, wheeled ones, but we developed an electronic calculator, the size of which was as large as a desk. It was indeed enormous compared with products available today, but the calculator was much more excellent than the wheeled ones in terms of speed and performance. It weighed as much as 140 kg and had to be carried by four adults! And you could buy a car for the price for this calculator! We visited our customers, carrying the calculator in a car to demonstrate its functions. At that time, there were few air conditioners. Customers felt pity watching four Casio employees carrying the calculator dripping with sweat, and said, "It would be hard to take it back to your office, so we will purchase it." (Laughing)

Subsequently in 1965, we developed an electric calculator, which was smaller than the electric one, but still weighed 15 kg. Initially it was designed for business use. We, however, were always pursuing light weight, thin, short, compact and low power consumption products and were committed to further downsizing and cost reduction. As a result, we could develop an electronic calculator for general consumers. I think that the calculator was the first product that made the market recognize the excellent features of Casio products. Presently, an IC electronic calculator weighs only tens of grams.

We attempted to develop a product as thin as possible, aiming to overcome the hurdle of 1 mm. We succeeded in reducing the thickness of an electronic calculator to 0.8 mm. We will continue to develop light weight, thin, short, compact and low power consumption products to provide customers with impressive products. I think it our pleasure as well as role and mission as an electronics manufacturer to please our customers with innovative products.

Iijima: I guess that the creation of new products always involved various pains and effort. Could you talk about the hard efforts you have made in developing products?


Yoshio Ono, Managing Director

Ono: Watches represent all the techniques for light weight, thin, short, compact and low power consumption products. When our company started to participate in the manufacturing of watches, it was taken for granted that timepieces were made of metal. We, however, used plastics for manufacturing watches in order to utilize our technologies for electronic calculators and to enable mass production.

It was indeed difficult to improve plastics to make them suitable as a material for watches. First of all, watches needed to be water-proof. Also, a watch had a wrist band, which needed to be soft and to be connected with the hard body. We determined to integrate the two parts, one of which was soft and the other was hard.

To do this, we needed to develop new plastic materials by tying up and collaborating with a company specializing in plastics. Independent development would require more cost and time, and it was much more efficient to form a technology partnership with a company having expert knowledge about plastics.

For the development of the "G-Shock" series, we needed to conduct field examinations on a continuous basis to make the watches usable under various conditions. For product development, it is important to utilize our actual life experience, in addition to desk plans. For example, those developing a watch for divers might need to experience diving and those developing a watch for runners might need to participate in a marathon race! We have a product named Protrek for mountaineers, which is equipped with technologies such as altitude sensors and direction sensors. We developed this product by experiencing contact with nature for ourselves.

Iijima: You created the "G-Shock" series by deepening understanding about human beings and nature through field experiments. Your wish to protect nature as a resource for creatures and to have contact with nature was indirectly communicated to consumers, which led to the smash hit of the products.

Now, I would like to ask about the story behind your next hit product: electronic diaries.

Ono: Electronic diaries were created in the process of developing electronic calculators. Our first electronic diary was released in 1983, as far as I remember. It also became the prototype for today's electronic dictionaries. Initially, the focus of an electronic diary was placed on the storage of personal data such as addresses and telephone numbers, not on the dictionary function. We developed it into a smash hit by adding the dictionary function.

Electronic dictionaries were developed based on the concept of computerizing paper dictionaries. Our latest electronic dictionary is equipped with functionality equivalent to 23 different paper dictionaries! It is easy to carry and provides an easy-to-use search function, which seems to have attracted many consumers.

Yamada: Parents always purchase new dictionaries for their children when they enter school. Every student has various dictionaries, such as a Japanese dictionary, a dictionary of kanji characters, a dictionary of old Japanese, an English-Japanese dictionary, and a Japanese-English dictionary. These five dictionaries together become rather heavy, and the weight of 23 dictionaries will amount to as much as 14 kg. Our latest electronic dictionary contributes to the saving of approximately 130,000 trees (based on the calculation that 50 kg of paper is produced from one tree; P19). Electronic dictionaries are much easier to carry than paper dictionaries and they were developed as advanced products towards a paperless culture.

Kashio: Electronic dictionaries also sold well because the elderly supported them. For them, the letters printed in


Yoshinobu Yamada, General Manager of the Quality & Environment Center

The Participants

Yukio Kashio,
Executive Vice President of Casio Computer Co., Ltd.

Yoshio Ono,
Managing Director, Member of The Board Senior General Manager Product Development HQ.

Atsushi Mawatari,
Director, Member of The Board Senior General Manager Electronic Device Div.

Yoshinobu Yamada,
General Manager of the Quality & Environment Center

Coordinator
Tsutomu Iijima,
Representative of the Association for Environmental Planners

read, and so they prefer electronic ones. Electronic dictionaries indeed represent a universal design product for use across generations, including elementary school pupils, junior and senior high school students, university students, and working people.

Casio's environmental management ranking jumping up to No. 19 in an environmental management survey

Iijima: Casio was ranked No. 19 among manufacturers in the 6th environmental management survey conducted by Nihon Keizai Shimbun for achievements in fiscal 2002. What environmental management policies led to this excellent result?

Yamada: In the same environmental management survey for the previous year, we were ranked No. 171. Following this result, we analyzed our activities to identify the problems and what should be done in the next fiscal year to overcome the problems. Thus, we utilized the survey as a benchmark to clearly set the themes and goals for our environmental activities. We will continue to do this. The most important thing, however, is to steadily promote the Plan, Do, Check, and Action (PDCA) cycle (P13) in our environmental management system.

Iijima: Regarding collaboration for technological innovation, which was discussed earlier, doesn't technological partnerships with various companies make it difficult for you to promote the green procurement of various components and devices when you want to independently develop environmentally-friendly products?

Yamada: As a premise for green procurement, we need to obtain support from our suppliers. We never force them, but ask them to give us written answers to our requests about green procurement. We rank the answers from suppliers, thereby clearly understanding their environmental policies and attitudes and what each of them thinks about the environment. We utilize these answers as a tool for environmental communication with our suppliers.

As the most important tool for building up a green procurement system, we introduced the Casio Voluntary Plan for the Environment (CVPE) in 1993. This Plan provides guidelines for voluntary environmental activities and shows the themes and measures for each stage of our business, from development, design, manufacturing, distribution, repair services to recovery/disposal. We attempt to develop products in line with this Voluntary Plan, in principle. The Plan has now been updated to Version VII and we will further continue to revise it in order to respond to changes in environmental trends. As a means to promote the implementation of the Plan, we have also developed our own environmental auditing sheet (P17). Using the sheet, we evaluate our own progress towards the achievement of the objectives declared in the CVPE at the three stages of planning, design, and decision-making on mass production.

Also, all Group companies with development units are ISO 14001 certified. At these companies, each business unit sets its own environmental objectives based on indirect impact assessment in compliance with ISO 14001. Furthermore, to promote environmental activities, we hold the Casio Environmental Conference twice a year, in order to communicate and share information with managers of the companies who are in charge of development, design and manufacturing units. In addition, the Quality & Environment Center has now its own website, through which employees can view and share company-wide environmental information, including educational materials.

Mawatari: The Electronic Component Division, recognizing the heavy environmental impacts caused by its activities, is making efforts to reduce such impacts. For example, 80% of electricity used by the Casio Group is consumed in the manufacturing of liquid crystals (P30). The TFT liquid crystals produced by Kochi Casio are used exclusively for mobile applications that require further power saving. For some of the LED backlights for liquid crystal displays of digital cameras, we use cold-cathode tubes, which contain mercury. In the future, however, we will make all our LED backlights mercury-free. Initially we used four LEDs to ensure brightness but now use two as a result of improved performance of liquid crystals and LEDs. We aim to promote technological development for further power saving and cost reduction in order to ensure profitability as a company in a way compatible with environmental conservation.

Factories manufacturing electronic components use enormous amounts of energy and water and it is important for them to consider methods to reduce the environmental impacts caused by their

Atsushi Mawatari, Director

environmental impacts caused by their activities, which will directly affect their running costs. For passive liquid crystals used for timepieces and electronic calculators, we are facing competition from Chinese products. This will raise our product prices if we make further investments in the introduction of equipment and technologies to make more eco products, but we are determined to develop high-quality products with less environmental impact as Casio brand products, which we believe, will eventually be chosen by consumers.

Development of impressive products will lead to contributions to society.

Iijima: It is said that in recent years companies are facing more requests to fulfill their social responsibilities. How does Casio respond to this trend?

Yamada: In so-called Corporate Social Responsibility (CSR), environmental responsibility is just one factor. It might therefore be rather hard to deal with CSR in detail in our environmental reports. Rather, we should incorporate CSR in discussions concerning our management policies, associating it with corporate quality.

Iijima: General consumers seem to associate Corporate Social Responsibility with what companies did or will do in the case of corporate scandals. There have been many such scandals in recent years. For companies, CSR is meaningless unless its fulfillment leads to higher corporate performance. For example, CSR could be a standard for investors to decide in which company to invest. Thus CSR might expand the possible range of fund raising. I think that companies should fulfill CSR in order to enhance their brand values.

Kashio: Casio's product lines include musical instruments. We manufacture keyboards at comparatively reasonable prices, mainly for educational purposes. We don't think, however, that keyboards for children, which are sold at more reasonable prices, do not need to produce good sounds. Children in the early stages of growth are most sensitive to sounds. Younger children therefore need better sounds. We develop sound sources for children to help them develop rich emotions, through which we are performing our social responsibility, I think.

Iijima: Making people happy by providing good sounds! I think a similar thing applies to digital cameras. In our daily lives, we photograph the moments that we want to retain in our memories. The products provided by Casio are used in activities that appeal to human emotions and invoke joy and excitement. I think this makes technological innovations truly meaningful.


Mr. Iijima

Thank you very much for your interesting comments. Finally, would you each please give a messages to the general readers of this environmental report and to your employees.

Ono: We annually input more than one hundred and several ten million products into the market as Casio brand products. As mentioned, music makes people happy. I think that all our products, including musical instruments, should help people become happy and enjoyable.

We will never stop pursuing light weight, thin, short, compact and low power consumption as our core technology. For example, lighter, thinner, and smaller cameras will change people's lifestyles and will contribute to a reduction in environmental impact. I believe that this will also enhance the value of Casio brand products.

Mawatari: I tell a similar thing to employees working in the Electronic Component Division. Their customers are professionals, who will evaluate our technologies. To meet the stringent standards of these professionals, it is not enough to provide products at reasonable prices. We also need to make unique proposals that other companies cannot do.

Yamada: Environmental laws and regulations targeting manufacturers have been becoming more and more stringent. Especially in Europe, manufactures must meet extremely severe requirements. In view of extended producer responsibility, producers are required to take more responsibilities because they are in the position to be able to do more than consumers. What consumers can do after products are delivered to them is limited, and it is therefore important for manufacturers to develop products that are energy-saving regardless of how consumers use them and that do not generate any hazardous substances after consumers dispose of them as waste. Recognizing that producer responsibilities can be fulfilled only by producers, we should develop more unique products, which will differentiate our products from those of competitors and enhance the power of the Casio brand.

Kashio: Casio's corporate philosophy is "Create and Contribute." It is said that necessity is the mother of invention. What we want to create is products that are universally required, not those that are temporarily required. Casio is a manufacturing company, and we would like to give priority to the provision of impressive products for customers, including after-sales service.

For a Sustainable Society

The Casio Group is implementing environmental measures in each stage of its business activities, including energy conservation, resource saving, and measures to deal with hazardous substances.

Casio's Business Activities

The Casio Group's business operations cover a broad range, comprising development, design, procurement, production, sales, service, and recycling.

In development and design, we promote the development of Green Products characterized by light weight, thin, short, compact and low power consumption. As a result of strenuous efforts, we could achieve the target for fiscal 2003, which was to boost the sales of Green Products to 30% of our total sales, as early as in fiscal 2002. Accordingly, we have set a new goal of increasing the sales to 50% by fiscal 2005. In fiscal 2002, we released the G-Shock, radio-controlled and solar powered model, credit-card-sized LCD digital cameras with a zoom function, and new cellular phones.

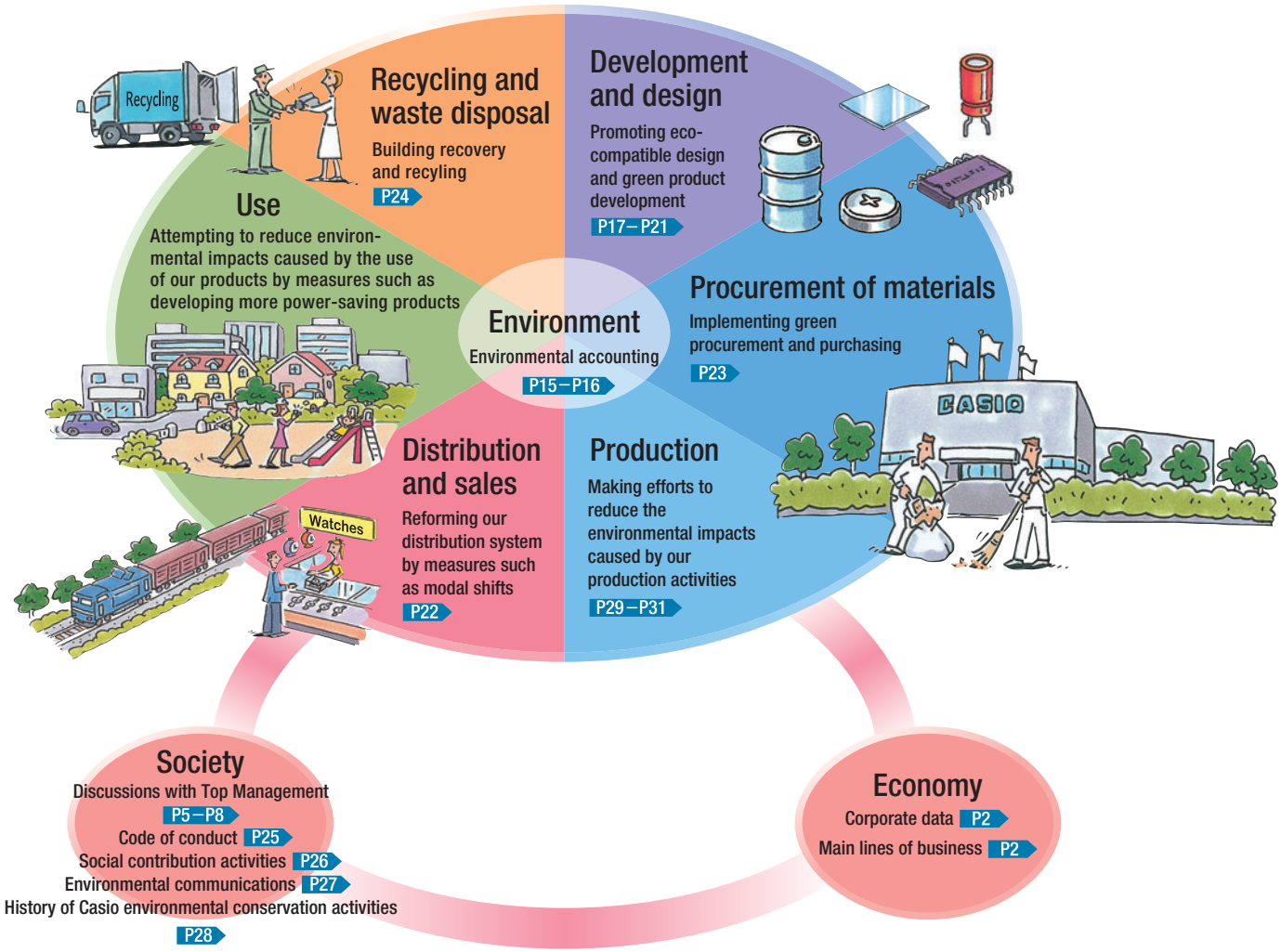
For the purchasing of materials, as a result of aggressively promoting green procurement, we could achieve the green procurement target for fiscal 2003, which was to increase the green procurement rate to 80%, in fiscal 2002. Accordingly, we have set new green procurement targets for fiscal 2005: to achieve a green procurement rate of 95% in Japan and a green procurement rate of 85% overseas.

Our production sites are actively participating in activities aimed at achieving the Environmental Action Plan for reducing the consumption of energy and water as well as the generation of waste and emissions of carbon dioxide (CO_2). They aggressively participate in environmental conservation activities conducted by local communities.

For social contribution activities, Casio has been supporting the International Dolphin & Whale Conference since 1994. Besides we give support to high-level research on natural and human science through the Casio Science Promotion Foundation.

We have recovery and recycling systems to promote recycling of printer consumables (drums and toner sets), rechargeable batteries, PCs, and information communications equipment based on the Law for Promotion of Effective Utilization of Resources.

We provide employees with environmental education through programs conducted to maintain and improve our environmental management systems in compliance with ISO 14001 as well as through information provided on the internal Web site for employees.

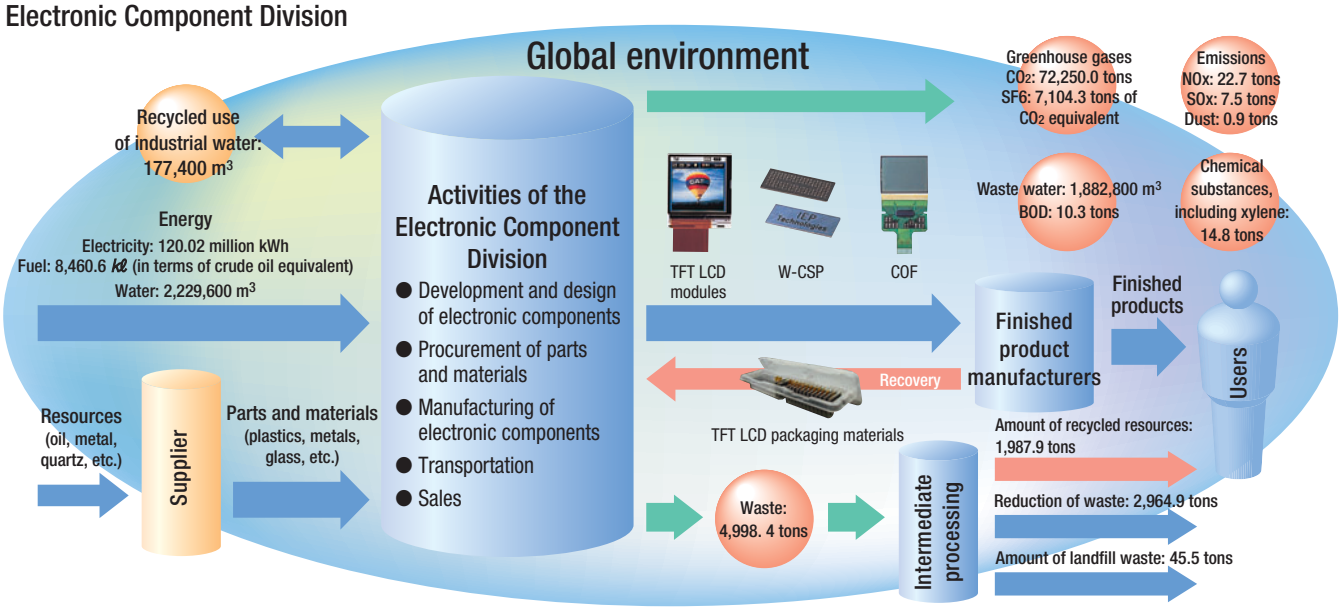


The Casio Group's Inputs and Outputs

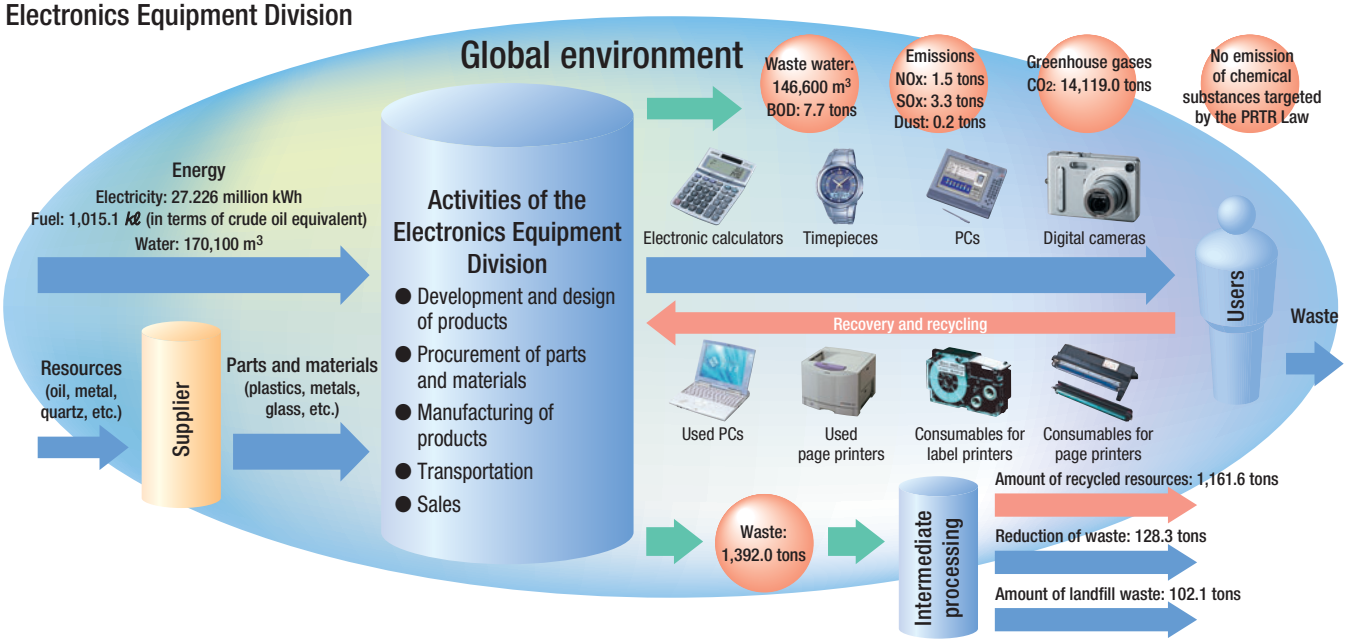
Casio's business operations are divided into the Electronic Component Division and the Electronics Equipment Division. We measured the environmental impact caused by these divisions, referring to what substances and energy sources they input for their activities and what were emitted or generated as a result.

*The Electronic Component Division is composed of four domestic sites, while the Electronic Equipment Division is composed of eight domestic sites.

Electronic Component Division



Electronics Equipment Division



The major products of the Casio Group's Electronic Component Division include TFT LCD modules manufactured by Kochi Casio, W-CSP and COF produced by Casio Micronics, and LCDs manufactured by Kofu Casio. These companies have clean rooms that meet the requirements for fine processing, pure water cleaning systems, and wastewater processing facilities. As a result, these companies alone account for approximately 80% of the energy consumed by the entire Casio Group and they also use more water and chemicals than the companies and sites belonging to the Electronics Equipment Division.

At our manufacturing factories, we have implemented aggressive measures for energy conservation and water saving. For example, at the factory of Casio Micronics, use of clean water was significantly reduced through the use of recycled wastewater from the cleaning process.

The companies belonging to the Electronics Equipment Division have transferred some of their production facilities overseas, including to China, but are still domestically manufacturing such items as digital cameras, cellular phones, and page printers. Production of these products requires advanced assembly technologies and significant levels of energy as well. We have therefore introduced energy conservation and resource saving to the product assessment criteria to be conducted at the product design stage, thereby promoting the development of environmentally-friendly products. At the same time, we encourage each of our factories to devise their own unique methods for energy conservation.

Glossary

W-CSP (Wafer-level Chip Size Package)
W-CSP represents an advanced LSI packaging technology. The LSI package is finished on a wafer by redistribution of pads, forming terminals, and sealing by resin. This technology made it possible to downsize the LSI package into the size of the chip.

COF
Chip-on-film. A method of directly joining an LSI chip to a thin resin film to achieve efficient, high-density packaging of LSI circuits in a limited space.

Environmental Action Plan "Clean & Green 21" Initiative

In order to implement environmental conservation measures on a voluntary and consistent basis, we have set specific targets for reducing the environmental impacts caused by our business activities based on the Casio Voluntary Plan for the Environment (CVPE).

Casio Environmental Charter

To conserve the global environment, Casio recognizes the importance of its corporate environmental responsibility across the operations of its entire group. Casio establishes basic policies and specific measures for contributing to world prosperity and human happiness from the broad perspective of international society, and endeavors to implement them.

Fundamental Environmental Policies

1. Casio group members shall comply with all environmental laws, agreements, and standards in Japan and overseas.
2. The Group shall establish voluntary "Casio Environmental Conservation Rules"*1 based on consideration for the environment at all product stages of development, design, manufacture, distribution, repair services, and recovery/disposal. All Casio business divisions shall assume responsibility for their implementation, additionally auditing the degree of compliance and making continual improvements.
3. From the standpoint of corporate social responsibility, and as good corporate citizens, all Casio Group members shall apprehend the importance of global environmental conservation and try to heighten their awareness.
4. These Policies shall apply to all Casio Group business divisions in Japan and overseas.

*1. The Casio Environmental Conservation Rules are specific action programs for environmental conservation, set forth in the "Casio Voluntary Plan for the Environment (CVPE)."

From the Casio Environmental Charter and Fundamental Environmental Policies to Environmental Action Plan

Casio Environmental Charter

↓

Fundamental Environmental Policies

↓

Casio Voluntary Plan for the Environment (CVPE)
Environmental action guidelines for the Casio Group that set forth specific themes and measures to be implemented at each stage: development, design, manufacture, distribution, repair services, and recovery/disposal.

↓

The Casio Group's Environmental Action Plan "Clean & Green 21" Initiative
Policies of the quantitative targets or deadlines among the items stipulated by the CVPE.

Casio Group Environmental Action Plan

The Casio Group formulated the Voluntary Plan for the Environment (CVPE) in January 1993 to implement the Casio Environmental Charter and the four Fundamental Environmental Policies, and began pursuing environmental conservation activities as a group-wide effort. In December 2002 the CVPE was revised for the seventh time in response to changing social circumstances and progress in our activities.

The CVPE stipulates "Casio Environmental Conservation Rules," as specific action programs for environmental conservation at each stage: development, design, manufacture, distribution, repair services, and recovery/disposal.

Based on these rules Casio established the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative in June 1996. The Initiative explicitly sets forth specific quantitative targets and implementation deadlines for energy conservation, waste reduction, and other environmental activities, and clarifies the medium-term action plan for the entire Casio Group. Efforts are underway to implement the plan.

The facing page presents the June 2003 revisions to the Environmental Action Plan.

Progress on the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative

Product-related initiatives

Items	FY 2002 targets	FY 2002 results	Newly added targets for FY 2003	Page No.
Eco product development target	To boost the sales of Green Products to 30% of total sales by fiscal 2003	The target was achieved one year earlier than planned by achieving the sales of Green Products to 35.5% of total sales as of the end of March 2003.	To boost the sales of Green Products to 50% of total sales by fiscal 2005	18
	To reduce the overall use of packaging materials by 20% by fiscal 2003 (compared to fiscal 2000)	A 12.7% reduction was achieved by downsizing individual packaging for individual products, discontinuing the use of inner packaging, and by making outer packaging.	Continuing	21
Hazardous substance phaseout target	To discontinue the use of solder containing lead by fiscal 2004	Technical confirmation was completed for consumer products and timepieces and preparations were under progress for the mass production of some models using lead-free solder.	Continuing	18
	To discontinue the use of lead (contained in purchased goods), cadmium, mercury, and hexavalent chromium specified in the RoHS Directive by the end of 2005	Keeping an eye on the RoHS Directive and the introduction of relevant laws and regulations in each country, surveys were conducted on hazardous substances contained in purchased parts, and the purchasing of parts not containing hazardous substances is being promoted.	Continuing	24

Business site-related initiatives

Items	FY 2002 targets	FY 2002 results	Newly added targets for FY 2003	Page No.
Energy conservation targets	To reduce carbon dioxide (CO_2) emissions per unit manufactured by 10% by fiscal 2005 and by 25% by fiscal 2010 (compared to fiscal 1990)	In fiscal 2002, CO_2 emissions per unit manufactured increased to 31.8% compared to fiscal 1990. This was primarily caused by the expansion of the factory at Kochi Casio belonging to the Electronic Component Division. Trial operation and adjustments required as a result of expansion led to an increase in energy use.	Continuing	29
Waste reduction targets	To achieve zero emissions (no landfill waste) by fiscal 2005	For the Electronic Component Division, Kofu Casio (head office and Ichinomiya) and Casio Micronics (Yamanashi) achieved zero emissions in fiscal 2001. In fiscal 2002, Casio Electronic Manufacturing belonging to the Electronics Equipment Division achieved zero emissions. In total, four companies have thus achieved zero emissions.	Continuing	28
	To reduce waste generation per unit manufactured by 30% by fiscal 2005 (compared to fiscal 2000)	In fiscal 2002, waste generated per unit manufactured increased by 14.9% compared to fiscal 2000, mainly caused by the launch of production at a new factory of Kochi Casio in the Electronic Component Division as well as by reduced production at Kofu Casio.	Continuing	29
Hazardous substance phaseout targets	To identify the use of CFC substitutes at all production sites including subcontractors by the end of fiscal 2002.	One of the subcontractors of the Electronic Component Division still used CFC substitutes. (The use of CFC substitutes will be discontinued by all subcontractors by fiscal 2004.)	To discontinue the use of CFC substitutes at all production sites, including subcontractors by the end of 2004	14
	To detoxify stored devices containing PCB by fiscal 2005	The Casio Group has 19 capacitors (4 still in use) and 258 small ballasts fluorescent lamp that contain PCBs. Best measures for detoxification were studied paying attention to the activities of the relevant industry associations, etc.	Continuing	14
Green procurement implementation targets	To increase the green procurement rate to 80% by fiscal 2003 regarding procurement from domestic suppliers	The target for fiscal 2003 was achieved one year earlier than planned by increasing the average green procurement rate of domestic sites to 80.3% as of the end of March 2002.	To increase the green procurement rate of domestic sites to 95% by fiscal 2005 To increase the green procurement rate of overseas sites to 85% by fiscal 2005	23

*The discontinuance of CFC substitutes targets those used for cleaning.

Glossary

Substances designated by the RoHS Directive
Hazardous substances designated by the Restriction of the use of certain Hazardous Substances (RoHS) Directive to be implemented in EU member countries from July 1, 2006. The substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEs).

Chlorofluorocarbon alternative
Substances used in the semiconductor manufacturing process or in cleaning, as refrigerants in refrigerators, and in other appliances in place of CFCs that deplete the ozone layer. The Kyoto Protocol stipulates the reduction of CFC substitutes.

Emission/waste generation per unit manufactured
CO_2 emission per unit manufactured (ton-CO_2/¥1 million), obtained by dividing CO_2 emissions (ton-CO_2) by production (¥1 million), and waste landfilling per unit manufactured (t/¥1 million), calculated by dividing wastes generation (t) by production (¥1 million).

Environmental Management System

For the constant improvement of our environmental performance, we promote a Plan, Do, Check, and Action (PDCA) cycle for our environmental management system.

The Thinking behind Environmental Management

The Casio Group is conducting environmental conservation activities based on the Casio Voluntary Plan for the Environment (P11) and the Environmental Action Plan (P12) under its environmental conservation system shown in the right diagram.

The environmental conservation system is established by the Promotion Office and the Special Committees in charge of Plan in the PDCA cycle, divisions and companies in charge of Do, the Environmental Audit Organization in charge of Check, and by the Casio Environmental Conference engaged in Action. We will carry through the system to contribute to environmental conservation and to fulfill our corporate social responsibilities.

Casio's environmental conservation system

	Roles
Casio Environmental Conference	Deliberates on and decides the Casio Group's environmental policy and action plan Exchanges information with Special Committees and Implementation Organizations on the state of activities, environmental trends, etc.
Special Committees	Promotes strategic themes that the entire group works on together and comprises the following four Special Committees: • Packaging Committee • Green Procurement Committee • Eco-Product Development Committee • Environmental Accounting Committee
Implementation Organizations	Implement environmental conservation activities
Promotion Office	Plans the Casio Group's environmental policies, action plan, and conservation rules
	Provides information on domestic and overseas environmental trends
	Runs the Casio Environmental Conservation Committee
Environmental Audit Organization	Internally audits how well environmental conservation activities are being carried out

Environmental Education

We conduct environmental education and awareness activities making it possible to be constantly mindful of the environment. New employees are given general environmental education before being assigned. Also, through general and specialized education programs, general employees, managers, and those in charge of the environment are provided training suitable to their working responsibilities in order to improve their environmental awareness and knowledge.

General education gives all employees a thorough awareness of environmental issues and policies, objectives, targets, and the like, while specialized education gives intensive procedural training to employees whose tasks have a heavy environmental burden.

We also provide the latest information on environmental laws and regulations, ISO 14001-related matters, the Casio Voluntary Plan for the Environment, industry trends, and other environment-related items through organizing the Casio Environmental Conferences (twice yearly) and our in-house Web site. Through other activities, such as the inclusion of articles on environmental activities in our in-house monthly magazine, employees are encouraged to improve their environmental awareness and share relevant know-how.

Environmental Conservation Initiatives and Awards

At the Casio Environmental Conference, participants formulate the policies and targets for the Casio Group's environmental conservation activities and present progress reports in order to contribute to environmental conservation. For environmental conservation activities conducted in fiscal 2002, the following awards were granted for activities that achieved praiseworthy results:

Award	Target	Details	Frequency	Number of award winners
President's Prize	Casio Group	Award for excellent achievements and contributions made to the Group in course of business	Twice yearly	One winner for the contribution to IR activities, realizing a great leap to No. 19 in Nikkei's environmental management ranking
Techno Power Award for Excellent Papers	Casio Group	Award for business activities leading to excellent patents and advanced technologies	Once a year	One winner (incentive award) for the development of an eco-compatible design assessment tool
Award for Improvement Proposals	Production sites	Award for environmental conservation activities that have achieved results	Twice yearly	Two winners at Kofu Casio for the creation and introduction of PC power-off assistant software and for the production of a bench from waste materials
Eco Bonus Award	Kofu Casio	Award for participation in volunteer environmental activities	From time to time	Total number of winners: 26 persons

Chairman explaining policies at the Casio Environmental Conference

Glossary

Environmental management system
A set of environmental management measures and managerial resources, based on which companies incorporate environmental policies into management policies and implement such policies in a Plan, Do, Check, and Action (PDCA) cycle. Environmental management systems are represented by ISO 14001-certified systems.

ISO 14001
ISO 14001 is an international set of standards that set forth the requirements for a company to meet in the process of establishing an environmental management system. It covers such issues as the choice of targets for environmental impact reduction; environmental education for employees, and procedures for establishing an appropriate system.

Obtaining ISO 14001 Certification

The Casio Group has been promoting the establishment of ISO 14001-certified environmental management systems in order to achieve environmental management through the participation of all employees.

Our major production sites, both within and outside Japan, are already ISO 14001 certified and have transferred to the stage of continual improvements on the systems and their performance. Also in fiscal 2002, Casio Micronics obtained certification for the integrated environmental management systems of its head office in Ome and a site in Yamanashi.

From now on, we will encourage our domestic and overseas sites engaged in sales activities to acquire ISO 14001 certification, in order to establish a group-wide environmental management system.

ISO 14001-certified Sites

As of April 2003

Domestic Sites	When certified
Yamagata Casio Co., Ltd.	Nov. 1997
Kofu Casio Co., Ltd.	Jan. 1998
Kochi Casio Co., Ltd.	Mar. 1998
Casio Electronic Manufacturing Co., Ltd.	Sep. 1999
Casio Support System Co., Ltd.	Jan. 2000
Casio Micronics Co., Ltd.	Mar. 2000
Casio Computer Co., Ltd., Tokyo Product Control and Technical Center	Jun. 2000
Casio Computer Co., Ltd., Hamura Research & Development Center	Oct. 2000
Casio Computer Co., Ltd., Hachioji Laboratory	Oct. 2000
Casio Computer Co., Ltd., Head Office	Dec. 2000
Casio Soft Co., Ltd.	Dec. 2001
Casio Techno Co., Ltd.	May 2002

Overseas Sites	When certified
Casio Korea Co., Ltd.	Apr. 1998
Jiu Shui Keng Casio Electronics Factory	Sep. 1999
Casio Computer (Hong Kong) Ltd.	Dec. 1999
Casio Electronics (Zhuhai)	Sep. 2000
P.T. Asahi Electronics Indonesia	Feb. 2001
Casio (Thailand) Co., Ltd.	Sep. 2001
Casio Taiwan Ltd.	Dec. 2001
Casio Electronics (Shenzhen) Co., Ltd.	Feb. 2002
Casio Electronics (Zhongshan) Co., Ltd.	Apr. 2002

Risk Management

The Casio Group, in addition to the implementation of ISO 14001-certified environmental management systems at its domestic companies and at its major domestic and overseas sites, have established risk management systems and promoted the prevention of environmental pollutions through such measures as providing training for emergency responses and conducting activities to reduce the use of hazardous substances.

For example, Kochi Casio has implemented measures to prevent the permeation of chemicals into the soil, including the use of double pipes for the supply of chemicals and coating of the space below the pipes laid underground with waterproof cement. Also, in installing supply tanks and others equipment, the company has prepared a wall to prevent leakage and annually provides training for employees to appropriately respond to any possible leakage.

● Compliance with environmental laws and regulations

In fiscal 2002, in relation to the environment, none of the Casio Group's companies and sites violated any laws or regulations, paid fines or penalties, received complaints, or suffered accidents and lawsuits.

FY	1998	1999	2000	2001	2002
Number of cases	0	0	0	0	0
Monetary amount	0	0	0	0	0

● PCB-containing equipment in storage

In the entire Casio Group, we store, under strict control, a total of 19 capacitors and 258 small ballasts fluorescent lamp that contain PCBs. Presently we are making examinations to formulate optimal detoxification plans.

● Soil pollution

According to the results of soil pollution surveys conducted based on the Soil Contamination Countermeasures Law and the Tokyo metropolitan government's Ordinance on Environmental Preservation, no hazardous substances exceeding the standard values were detected at any of our sites.

● Underground water

We conduct an annual survey of underground water. No hazardous substances exceeding the standard values have been detected thus far.

● PRTR

To comply with the PRTR Law, each of our sites prepares a compliance manual, identifies the release and transfer amount of relevant substances, and submits reports. (P29)

● Hazardous air pollutants

The Casio Group uses none of the 13 substances* specified for control in the guidelines established in October 1996 by the Ministry of Economy, Trade and Industry.

*The 13 substances: acrylonitrile, acetaldehyde, vinyl chloride monomer, chloroform, 1,3-dichloroethane, dichloromethane, tetrachloroethylene, trichloroethylene, 1,3-butadiene, benzene, formaldehyde, nickel subsulfide, nickel sulfate

● CFC substitutes

The Casio Group discontinued the use of CFC substitutes in fiscal 2001, but its subcontractor factories are still using HCFC-141b. We plan to discontinue its use by the end of fiscal 2004.

Glossary

PCB
Polychlorinated biphenyls (PCBs) were used as electrical insulators, insulating oil for capacitors, and as a heating medium for transformers. They can also act as environmental hormones or endocrine disruptors.

PRTR
PRTR stands for pollutant release and transfer register. Under the PRTR system, the national government tabulates and announces data on the transfer of chemical substances that might be harmful to human health and the ecosystem and their release into the air, water, and soil based on reports submitted by companies.

Environmental Accounting

We analyze the cost effectiveness of our environmental activities conducted in course of business to the maximum possible extent. We tabulated relevant accounting data for fiscal 2002 based on the Ministry of the Environment's Environmental Accounting Guidelines (2002 edition).

Casio's Concept of Environmental Accounting

The Casio Group started to introduce environmental accounting in fiscal 1999 and has been publishing its accounting results since fiscal 2000.

Regarding the accounting results, we publicly announce only valid and reliable figures. Internally, however, we experimentally tabulate data on the cost for recovery from environmental pollution; litigation costs; and reduction of CO_2 and waste emissions through energy and resource saving converted to monetary values as a tool to help decide on policies for environmental management.

Further, we continually evaluate and review the indicators for environmental management to make us more environmentally viable.

Economic effectiveness = Total economic effects / Total environmental cost (Economic effectiveness represents the economic rationality of total cost spent on environmental activities.)

FY 2002			FY 2001		
Electronic Component Division	Electronics Equipment Division	Total	Electronic Component Division	Electronics Equipment Division	Total
0.07	0.53	0.34	–0.09	0.57	0.30

Environmental efficiency = Sales (in ¥1 million) / Environmental impact (in CO_2 emissions: ton-CO_2) (Environmental efficiency represents the sales per 1 ton of CO_2 emissions.)

FY 2002			FY 2001		
Electronic Component Division	Electronics Equipment Division	Total	Electronic Component Division	Electronics Equipment Division	Total
0.98	15.77	3.40	0.91	12.79	2.90

*Sales: Total sales of nine domestic companies (see page 1) excluding those obtained by selling to other Casio Group companies

Results for Fiscal 2002

The following table shows the results for fiscal 2002. To reflect the change in the scope of accounting targets, the results for fiscal 2001 were also appropriately revised (see page 1).

For environment-related capital investments, we spent ¥71 million to purchase devices such as LCD cleaning system and a device required for conducting research on lead-free solder. Compared with fiscal 2001, in which approximately ¥1.2 billion was spent for environmental measures required following the additional construction of the third factory at Kochi Casio, the amount of environment-related investments decreased significantly. In environment-related costs, there was a slight increase for the Electronic Component Division and a small decrease for the Electronics Equipment Division. As a whole, compared with fiscal 2001, there were no outstanding changes in the amount of environment-related costs.

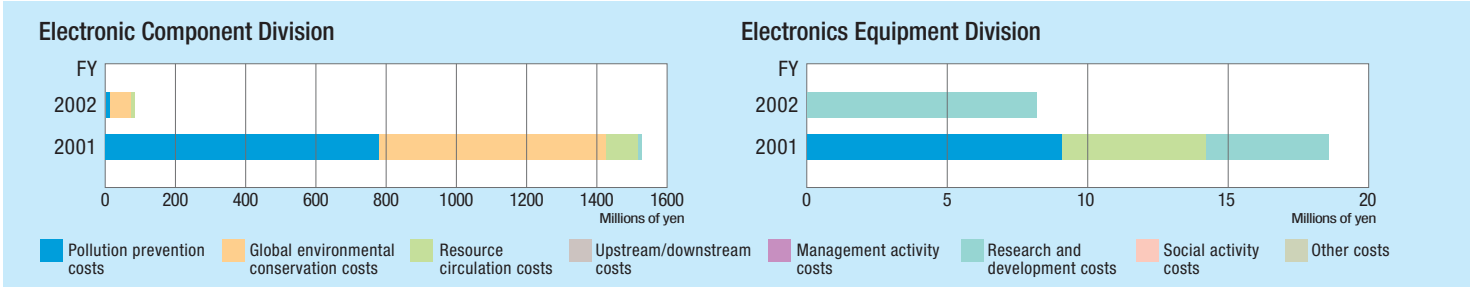
As "Other costs," a total of ¥4 million was posted, which is a temporary cost required to implement measures related with environmental laws and regulations enforced in North America. For economic effects derived from environmental conservation measures, there was an increase in the energy conservation effects, which had recorded a remarkable decrease in fiscal 2001, while there was a decrease in the effects obtained from recycling, such as waste cost reduction. On the whole, we achieved slightly an increase in economic effects.

Results for FY 2002 (April 2002 to March 2003)

Item		Environmental conservation costs																				
		Capital investment amount										Environment-related costs										
		Electronic Component Division			Electronics Equipment Division			Total			Major details	Electronic Component Division			Electronics Equipment Division			Total			Major details	
		FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change		FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change		
Business area costs		63	1,543	–1,480	0	14	–14	63	1,557	–1,494		344	302	42	206	221	–15	550	523	27		
Breakdown	Pollution prevention costs	11	783	–722		9	–9	11	792	–781	System for removing and controlling hazardous substances	165	138	27	3	15	–12	168	153	15	System maintenance and control costs	
Breakdown	Global environment conservation costs	50	650	–600			0	50	650	–600	Cleaning system	13	18	–5		1	–1	13	19	–6		
Breakdown	Resource recycling costs	2	110	–108		5	–5	2	115	–113	Pure water recycling system	166	146	20	203	205	–2	369	351	18	Recycling and waste costs	
Upstream/ downstream costs				0			0	0	0	0				0	137	114	23	137	114	23	Toner-set recovery costs/Green purchasing related costs	
Management activity costs				0			0	0	0	0		48	61	–13	108	109	–1	156	170	–14	ISO compliance costs/ Personnel expenses for management activities/ Educational costs	
Research and development costs			2	–2	8	4	4	8	6	2	System for research on lead-free solder		4	–4	59	65	–6	59	69	–10	Green product development costs/ Lead-free solder research costs	
Information disclosure/ social contribution costs				0			0	0	0	0		13	17	–4	20	39	–19	33	56	–23	Tree planting costs/ Environmental report production costs/Eco products exhibition costs	
Other costs				0			0	0	0	0				0	4		4	4	0	4		
Total		63	1,545	–1,482	8	18	–10	71	1,563	–1,492		405	384	21	534	548	–14	939	932	7		

*Environment-related costs do not include depreciation costs for fixed assets.
*Personnel expenses are calculated using average unit figures.

Capital investment



Examples of Projects Achieving Results from Environmental Investments

Each companies and production site in the Casio Group promotes environmental impact reducing activities by implementing various projects.

The projects shown at the right are some examples of such activities. In addition to these activities, efforts are being made to reduce landfill waste and waste generation without making further investment or spending extra money, through the selection of recycling companies and severe internal controls.

Kofu Casio reduced the amount of waste by 8.4 tons by reusing materials including stick LSIs and trays for supplying parts.

Domestically, the Casio Group reuses and recycles 3,150 tons of waste (excluding heat recovery incineration), which volume for approximately 50% of the waste generated by the Group.

Project details	Formula for calculating cost effectiveness	Economic effectiveness
Installation of equipment for recovering and reusing wastewater	¥20,200,000 (monetary effects) / ¥19,000,000 (investment amount) =	1.06

The introduction of this system produced remarkable economic effects. The system made it possible to recover water used for cleaning and reuse it the basis for producing pure water. As a result, the amount of underground water pumped for use, wastewater discharged as sewage, and chemicals used for processing were reduced. Related costs were also reduced. The cost for purchasing the system was recovered within one year and the depreciation period for the system was set at 15 years.
(The use of water resources was reduced by approximately 40,000 m^3 on an annual basis for this system, thereby reducing the wastewater discharged as sewage.)

Replacement of lighting equipment with a more efficient type (Hf-type)	¥65,000 (monetary effects) / ¥550,000 (investment amount) =	0.12

A detailed survey and a review were conducted on the lighting intensity required for some of our production processes. Also, more efficient Hf-type fluorescent lamps were introduced to reduce the consumption of electricity. Although the economic effectiveness is only 0.12 because the project was conducted on a small scale, the investment cost may be recovered within the ten-year depreciation period.

Updating to highly efficient transformers	¥522,000 (monetary effects) / ¥7,000,000 (investment amount) =	0.075

The transformers for electricity supplied to factories were replaced with highly efficient ones for more efficient transformation of electricity and for energy conservation. Although the economic effectiveness is as small as 0.075, the investment cost may be recovered within the 15-year depreciation period.

* We calculate the effects of environment improvement activities by company/site and by project by dividing the annual monetary effects of energy conservation by the investment amount. It would be ideal if the calculation result is 1 or more, but we think it acceptable for environmental management if the value obtained by multiplying the result by the number of years comprising the depreciation period is not less than 1.

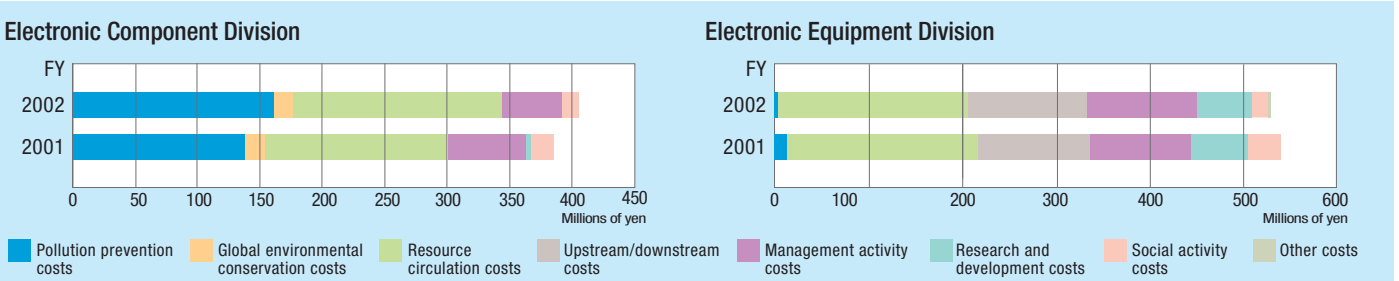
** The investment amounts were calculated based on the actual results for fiscal 2001 and the effects based on the actual results for fiscal 2002.
The monetary effects shown below are actual results by project and do not include future effects calculated based on hypothetical estimations.

Unit: millions of yen

Economic effects of environmental conservation measures									
Electronic Component Division			Electronics Equipment Division			Total			Major details
FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change	FY 2002 result	FY 2001 result	Change	
25	–44	69	53	7	46	78	–37	115	
3	–117	120	39	–1	40	42	–118	160	Energy saving (compared to previous fiscal year)
52	32	20	12	4	8	64	36	28	Effects from the promotion of resource saving
–30	41	–71	2	4	–2	–28	45	–73	Reduction of waste-related costs (compared to previous fiscal year)
5	10	–5	232	305	–73	237	315	–78	Recycling of products, reuse of subsidiary materials, income from sales of used materials
30	–34	64	285	312	–27	315	278	37	

Environmental impact		Environmental conservation effects (compared to previous fiscal year)			
Electronic Component Division	Electronics Equipment Division	Electronic Component Division		Electronics Equipmen Division	
Total for fiscal 2002	Total for fiscal 2002	Change (in quantity)	Change (in percentage)	Change (in quantity)	Change (in percentage)
CO_2 72,250 tons	CO_2 14,119 tons	4,603 tons up	7% up	449 tons up	33% up
NOx 23 tons	NOx 2 tons	5 tons up	25% up	0.3 tons up	28% up
SOx 8 tons	SOx 3 tons	2 tons up	31% up	0.3 tons up	10% up
Waste volume 4,998 tons	Waste volume 1,392 tons	1,115 tons up	29% up	15 tons down	1% down
Landfill volume 45 tons	Landfill volume102 tons	22 tons down	32% down	85 tons down	45% down
Substances under PRTR 124 tons	Substances under PRTR 3 tons	16 tons up	14% up	1 ton up	92% up
		Following the launch of new factories at two companies belonging to the Electronic Component Division (Kochi Casio and Casio Micronics in Yamanashi), there was an increase in the use of electricity and fuels for air conditioning, which led to increased CO_2, Nox, and Sox emissions. The total amount of waste also increased. In the future, however, the emission/waste generation per unit manufactured will be reduced through planned production.			

Environment-related costs



Development of Green Products through Product Assessment

We conduct product assessment to help develop environmentally conscious products, and certify those meeting our standards as "Casio Green Products."

Environmentally Conscious Products Manufacturing

Under its Casio Voluntary Plan for the Environment (CPVE), the Casio Group has been conducting assessments of new products since 1993. In 2001, we created the Casio Guidelines for Green Product Development to clarify the standards for developing eco-products. Based on these guidelines and the documented procedures for product-related environmental audits, we prepare product environmental audit sheets, which are used to conduct product assessment at every stage from product planning. Based on assessment results, we certify products that meet the standards set forth in the guidelines as Casio Green Products.

Environmental Design Assessment
Degree of adoption of basic eco-designs
- Ease of recycling

+

Environmental Compliance Assessment
Degree of adoption of advanced eco-designs
- Energy conservation, resource-saving, none-use of lead, etc.

Documented procedures for product environmental audits

Product environmental audit sheet

Product Assessment Composition for the Electronics Equipment Division

Product assessment is accomplished on environmental design (on the degree of adoption of basic eco-designs) and environmental products (on the degree of adoption of advanced eco-designs). With regard to environmental designs, we evaluate the degree of adoption of designs for the ease of reduction, recycling, and reuse (3 Rs), and use of parts containing less hazardous substances. We evaluate environmental product in their effective use of resources, including the use of recycled materials, energy conservation, and energy saving and assess the elimination of specified hazardous substances. Products that satisfy both the standards in the product assessment or those acquiring Type I environmental label certification such as Eco Mark or Blue Angel (P19) are certified as Casio Green Products.

Product Assessment Process for the Electronics Equipment Division

We conduct product assessment at three stages: first at the product planning stage, second when determining the design, and third when making a decision on the launch of mass production.

The Quality & Environment Center then audits and confirms the assessment results.

Product Assessment Results

Product type	FY 2000 results	FY 2001 results	FY 2002 results
Electronics Equipment Division products	60	121	92
Electronic Component Division products	61	45	80
Total	121	166	172

In-house Standards for Green Products

❶ Consumer Products

- Electronic calculators
- Electronic dictionaries
- Electronic stationery
- Digital cameras
- Cellular phones
- Timepieces (clocks, watches)
- Electronic musical instruments
- LCD TVs

Minimum required score is 90 out of total 100 points

Environmental design assessment		
	1	Material labeling
	2	Recyclable design
	3	Use of common type of resin
	4	Easy disassembly
	5	Recycling of batteries
	6	Material identification
	7	Disclosure of environmental information
	8	Individual sorting and disassembly
	9	Recycled resources
	10	Green procurement
	11	Ozone layer production, pollution prevention

+

Compliance with at least two among the six items is required

Environmental product assessment		
	1	Reuse of resources: products other than watches
		Allergic safety: watches
	2	Reduction of power consumption, longer battery life
	3	Reduction of the number of parts
	4	Effective use of resources
	5	Adoption of lead-free solder
	6	Discontinuance of the use of specified hazardous materials

❷ System Products

- Printers
- Handheld terminals
- Office computers
- PCs
- PDA/HPC (for corporate users)
- Slip issuing system (Rakuichi)
- Electronic cash registers/POS terminals

Minimum required score is 810 (90%) out of total 900 points

Environmental design assessment		
	1	Energy conservation
	2	Reducing resource use
	3	Reuse
	4	Recycling
	5	Easy processing
	6	Environmental soundness
	7	Packaging materials
	8	Information disclosure
	9	User manuals, catalogs, etc.

+

Compliance with at least two among the nine items is required

Environmental product assessment		
	1	Top runner in resource savings
	2	Top runner in energy conservation
	3	Top runner in environmental impact
	4	No use of lead
	5	No use of hazardous substances
	6	No use of chrome
	7	No use of PVCs
	8	Certified for energy-saving labels
	9	Recovery and recycling

Product Assessment Composition for the Electronic Component Division

We assess the products of the Electronic Component Division regarding 3R-promoting designs and the reduced use of hazardous substances according to our in-house standards or the standards required by our customers. The assessment results are then checked and examined by our production sites.

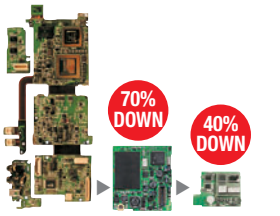
In-house standards				
	1	Increased use of recycled resources	6	Reduced power consumption
	2	Easier processing for recycling	7	Downsizing of packaging materials, reduced use of materials
	3	Easier disassembly for recycling	8	Compliance with regulations on packaging materials
	4	Smaller, thinner, lighter products	9	Labeling of packaging material for compliance with regulations on packages
	5	Discontinuance of the use of materials containing hazardous substances, reduced use of lead	10	Discontinuance of the use of CFC substitutes, chlorinated solvents, and greenhouse gases

Examples of Green Products

Credit-card-sized LCD Digital Camera

For the EX-S2 digital camera, Casio's unique high-density packaging technology (multi-chip module or MCM) reduced the circuit packaging area by approximately 70% compared with the previous model. For the EXILIM ZOOM (EX-Z3), the area was further reduced by 40% compared with the EX-S2 as a result of three-dimensional LSI packaging achieved through Stack MCM technology. This new model also achieves a 13% reduction in power consumption. Also, for better views, the liquid crystal display is expanded from the 1.6 Type to 2.0 Type without increasing power consumption. Furthermore the individual package box is downsized by 37%, thereby achieving resource saving.

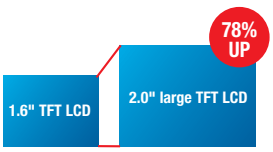
EX-Z3



Circuit packaging area of the previous model (EX-62)

Circuit packaging area of EX-S2

Circuit packaging area of EX-Z3 using Stack MCM technology



Radio-Controlled and Solar-powered Watch

For ease of assembly and disassembly to promote recyclability, we have devised a structure that enables the attachment of the parts shown at the right without using screws. As a result, the total number of screws used for a unit is reduced by ten screws.

Radio-controlled and solar-powered watches keep accurate time using the standard time signal and do not need battery replacements because of the use of solar cells. Also, through the development of more power-saving LSIs, power consumption has been reduced by 50%. For "The G" model, we have prolonged the duration of life by making it more resistant to shocks.

* The SUS bezel, urethane bezel and band pieces are attached to the case without using screws.

Eco-Friendly Calculators

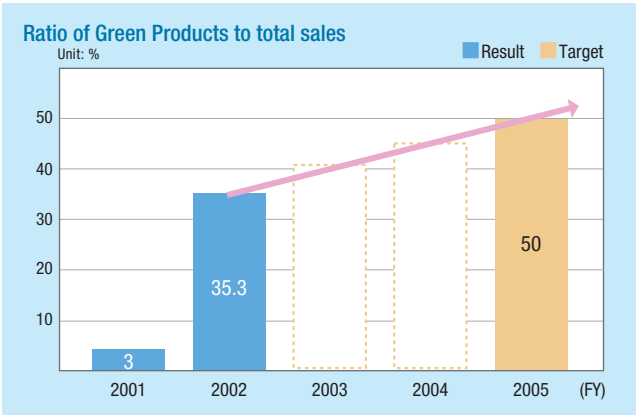
For 80% of our calculators, we use solar cells to promote energy conservation. Their cases are made of 100% recycled plastics. Also for these calculators, we do not use hazardous substances by promoting such measures as the use of lead-free solder.

* Last year, we used 30 tons of recycled plastics in eco-friendly calculators and will further increase the use.

C.G.P. 50 Activity (Boosting the Sales of Casio Green Products to 50% of Total Sales)

We achieved the C.G.P. 30 target set in fiscal 2001 one year earlier than planned, and have set a new C.G.P. 50 target, aiming to boost the sales of Green Products to 50% of our total sales by fiscal 2005.

Item \ FY	2001	2002	Total
Consumer product	1	61	62
System product	0	5	5
Total	1	66	67



Products Using Lead-Free Solder

As part of our efforts to reduce hazardous substances that are harmful to human health and the environment, we started to use lead-free solder for eco-friendly calculators in fiscal 1999. In fiscal 2003, we will expand the use of lead-free solder to all electronic calculators, electronic stationery, electronic musical instruments, timepieces, etc. to completely discontinue the use of solder containing lead by fiscal 2004.

Glossary

Lead-Free Solder
The solder used for printed circuit boards is an alloy of tin and lead. Lead leaching out of discarded printed circuit boards causes environmental pollution problems. Lead-free solder does not contain lead which is a hazardous heavy metal, and is composed of tin, silver, copper, or other metals.

Environmentally Conscious Products

Products certified for environmental labels or those meeting the standards set by the Law on Promoting Green Purchasing are regarded as environmentally conscious products.

For details, please refer to: www.casio.co.jp/env/env_product.

Eco Mark-Certified Products

The Eco Mark label is an environmental label granted to products approved by the Eco Mark Office of the Japan Environment Association as useful for environmental conservation, including those with less environmental impacts.

Item \ FY	2001	2002	Total
Consumer product	49	51	100
System product	2	0	2
Total	51	51	102

Eco Mark

Product using solar battery modules named CASIO
Certification No.: 98026001

Solar-powered clock and watch named "Wave Ceptor"
Certification No.: 01071001

PC Green Label-Certified Products

The PC Green Label is an environmental label granted by the Japan Electronics and Information Technology Industries Association (JEITA). PCs meeting the environmental design standards of JEITA are certified for PC Green Labels. The standards cover environmentally conscious designs and manufacturing as well as the recovery, reuse and recycling of end-of-life products.

Item \ FY	2001	2002	Total
System product	1	2	3

PC Green Label

International ENERGY STAR Program-Certified Products

The INTERNATIONAL ENERGY STAR Program, implemented under mutual recognition between Japan and the United States, defines a set of energy conservation standards for OA equipment to promote the development and popularization of energy saving and efficient office machines. The INTERNATIONAL ENERGY STAR labels are mainly granted to products that meet the standards for power consumption in standby mode.

Item \ FY	2001	2002	Total
System product	8	7	15

International Energy Star Program Mark

Products Complying with the Law on Promoting Green Purchasing (Registered in the GPN Database)

We register our products that we think comply with the Law on Promoting Green Purchasing in the Green Purchasing Network's GPN Database.

Item \ FY	2001	2002	Total
Consumer product	7	5	12
System product	11	12	23
Total	18	17	35

GPN Database URL: http://eco.goo.ne.jp/gpn/index.html

TOPICS

Reducing the use of paper resources by manufacturing electronic dictionaries

Based on the annual sales of all Casio electronic dictionaries sold in fiscal 2002, we calculated the total weight of paper that would have been required to make paper dictionaries equivalent to the number of dictionaries included in the electronic ones in order to estimate the benefits obtained from computerization. (We assumed that one tree was required to produce 50 kg of paper.) According to the calculation results (obtained by dividing the total weight of 6,445 tons by 50 kg), we reduced the use of paper by an amount equivalent to saving about 130,000 trees.

Life Cycle Assessment (LCA) Results

Comparison of Watches through LCA

We compared and examined the differences in environmental impacts of watches by material (metal/plastic) used for major parts (case body, bezel, and watch strap), using the LCA method.

MTG-900DJ

GW-300J

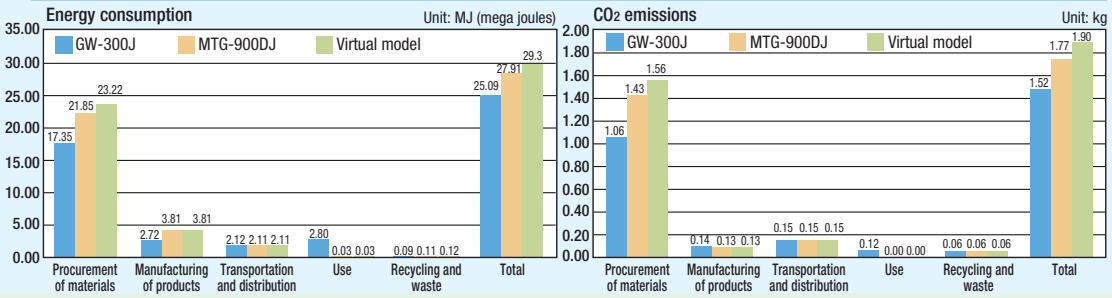
Conditions by model

Model name \ Major component	Case body	Bezel	Watch strap
GW-300J	Plastic	Metal	Plastic
MTG-900DJ	Plastic	Metal	Metal
Virtual model	Metal	Metal	Metal

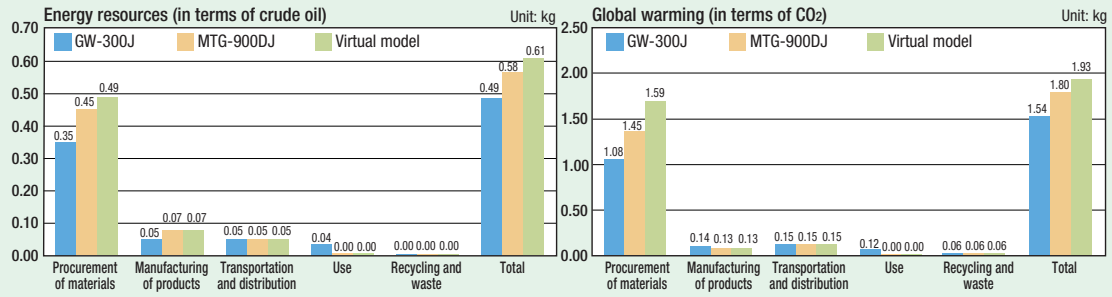
*Virtual model: watch made of 100% metal by assuming replacement of MTG-900DJ casing with metal

There are five targeted stages: procurement of materials, manufacturing of products, transportation and distribution, use, and recycling and disposal.

Inventory analysis (per watch)



Impact assessment (per watch)



Conclusions

1. It was verified that plastic exteriors that are dominant among Casio watches and their cases are superior to all metal exteriors in terms of LCA.
2. Watches need to attract customers by their exterior design, in addition to their functions, and the composite design combining metal and plastics, which characterizes Casio watches, is effective in terms of LCA as well.

Inventory analysis

Environmental impacts are quantified for each stage regarding inputs (energy, materials, parts, etc.) and outputs (CO_2, waste, etc.) and are listed in a table. Inventory analysis thus enables the quantification of input- and output-related environmental impacts.

Impact assessment

Based on the inventory analysis results, environmental impacts are assessed for each category item (energy resource (depletion of crude oil), global warming, acidification, etc.). Through such impact assessment, specific impacts caused on the global environment are identified.

Interrelationship between inventory analysis and impact assessment

Usually, inventory assessment is conducted based on inventory analysis results, but it is also possible to utilize the impact assessment results to plan measures for environmental impacts quantified in inventory analysis.

For example, in order to reduce the environmental impacts on global warming identified in terms of CO_2 in impact assessment, it would be effec-tive to reduce environmental impacts quantified as CO_2 emissions.

Measures to Promote Fuel Cells as a Next-Generation Clean Energy Source

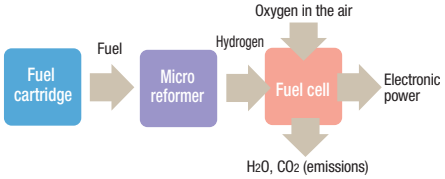
Casio has been developing fuel cells that are anticipated for next-generation clean energy.

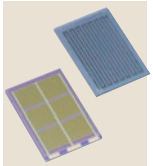
Fuel cells generate power through a reaction between the hydrogen contained in alcohol (such as methanol) and oxygen in the air. Fuel cells emit only a small amount of CO_2 and water while in use. The fuel cartridge is exchangeable and in the form of easily recyclable aluminum or PET bottle, achieving far less environmental impacts than ordinary cells. Also, fuel cells can be continuously used for about four times longer than usual lithium-ion batteries and weigh about half as much. They are thus very efficient cells usable for higher performance portable devices.

We developed a postage stamp-sized reformer to downsize a fuel cell with a reformer on it and improve its performance at the same time, by using our semiconductor processing technology. Although it was said that a fuel cell with a reformer on it achieved high performance but was too large to be mounted on a mobile device, but we succeeded in downsizing this type of fuel cell.

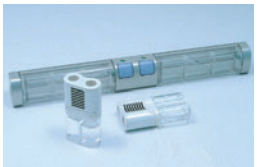
At present, research and development are being promoted for the practical use of fuel cells. We will make efforts to popularize fuel cells by achieving international compatibility and by establishing a social infrastructure for their recycling. We plan to utilize these cells for the development of environmentally-aware mobile devices for the protection of the global environment.

Mechanism of reforming type fuel cells system





Micro reformer



Anticipated products

Promotion for Packaging Materials

We are committed to reducing the use of packaging materials and making improvements through such measures as the use of recycled resources for packaging.

By comprehensively reviewing the flow from packaging to distribution, we are reducing the environmental impacts caused in the process.

Environmental Measures for Packaging Materials

As a result of reviews on the composition and forms of packaging, and the strength of the products themselves, the use of inner packaging boxes was discontinued and individual packaging and outer packaging were made smaller and lighter for reducing the use of packaging materials and the amount of wasted packaging materials. Also, we promote the use of recycled paper and resin.

Reducing the total use of packaging materials

We plan to reduce the total use of packaging materials by 20% by the end of fiscal 2003 by fiscal 2003 (compared to fiscal 2000).
(Total use of packaging materials: total use of plastics, polystyrene foam, paper, and cardboard)

Reducing the use of cardboard

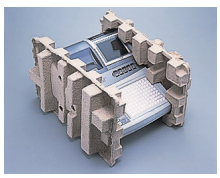
- Discontinuing the use of inner boxes in which a small lot of individual packaging is stored, and storing individual packaging directly in outer boxes
- Reviewing the materials used for outer boxes to make them as thin as possible

  Target: to reduce usage by 20% by the end of fiscal 2003 (compared to fiscal 2000)

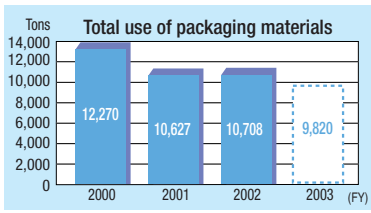
Reducing the use of polystyrene foam

We are replacing polystyrene foam with paper-based materials. In fiscal 2002, we reduced the use of polystyrene foam by 21%.
Target: to reduce usage by 30% (compared to fiscal 2000)

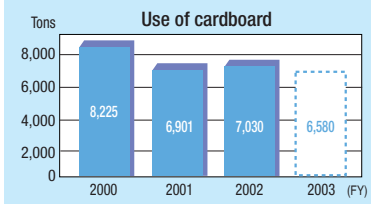
Cardboard protector box suitable for stacking used for business PCs with integrated LCDs



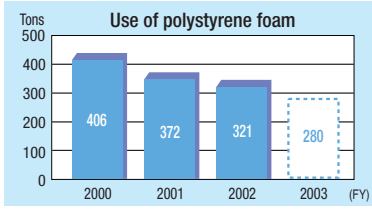
Pulp mold packaging material for electronic cash registers



Target for fiscal 2003	
Use	Compared to fiscal 2000
9,820 tons	80%



Target for fiscal 2003	
Use	Compared to fiscal 2000
6,580 tons	80%

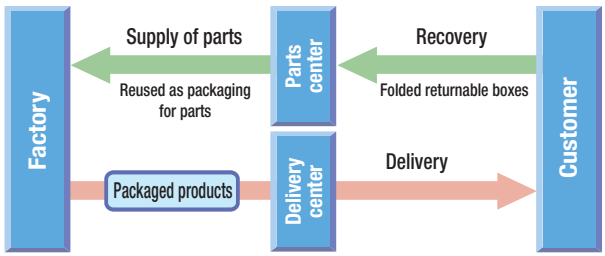


Target for fiscal 2003	
Use	Compared to fiscal 2000
280 tons	70%

Measures for Returnable Packages

Most packaging materials are eventually disposed of as waste. It is therefore effective for environmental conservation to use returnable packaging that can be used repeatedly. We have analyzed the flow from supply of parts to our factories to the distribution of products to customers. Targeting large-sized products, we are making preparations for the use of returnable packaging boxes that can be used repeatedly. We plan to start the use of these packages by the end of fiscal 2003.

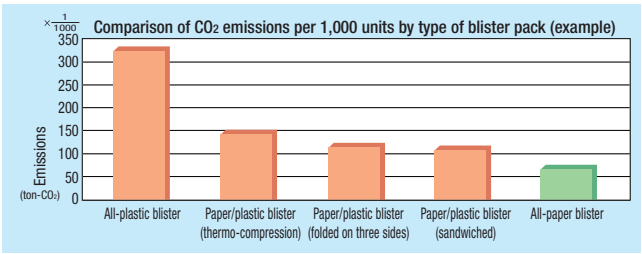
Conceptual diagram



Selection of Packaging Materials based on LCA

Based on the comparison of data on environmental impacts (in terms of CO_2 emissions) caused by each packaging material obtained based on LCA of different packaging materials, we choose environmentally friendly materials and develop new packaging methods to decrease the environmental impact caused by packaging materials as a whole.

We also developed all-paper blister packs for packaging electronic calculators. In fiscal 2003 and onwards, we will expand the use of these packs to other products.



Vertical resin pack

Heat sticking by pressure blister packaging

3 sided flexible blister package

Insert blister packaging

Paper blister packaging

Future Measures

We will design packaging that contributes to the reduced use of materials and to the reuse of these materials. In order to reduce environmental impacts towards the establishment of a recycling-based society.

To reduce the use of materials, efforts will be made to make packages smaller and lighter and to decrease the number of components used for products. We will design packages choosing environmentally friendly materials as standards. For the reuse of packaging materials, towards zero waste, we will clarify the flow from the procurement of materials to the marketing of products and establish an efficient system for returnable packages, targeting large-sized products.

Promotion for Distribution Measures

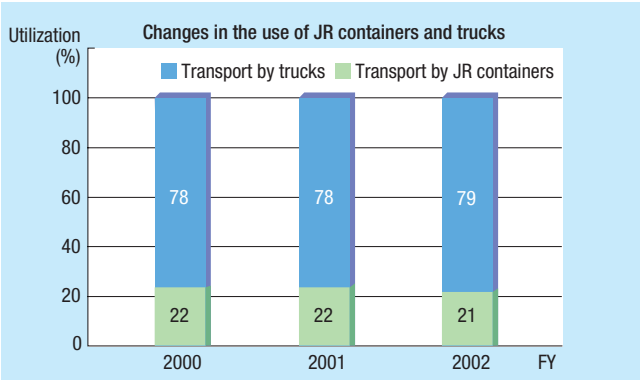
Noting that the CO_2 emitted from vehicles such as trucks also causes global warming, we are reducing environmental impacts caused by our distribution activities through modal shifts and a reduction of delivery vehicles.

Domestic Distribution

Modal shift

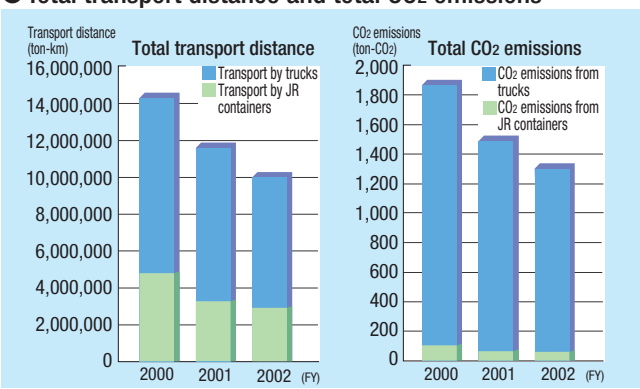
We now make it our policy to promote a modal shift from transportation by trucks with large environmental impacts to rail freight transportation. By volumetric ratio, 21% of our freight was delivered by Japan Railways (JR) using rail containers and 79% by trucks in fiscal 2002. The utilization ratio remained almost the same as in fiscal 2001. The total CO_2 emissions were 1,308 tons in fiscal 2002, reduced by 214 tons compared to fiscal 2001.

●Utilization rate



* For the utilization rates, total transport distances and total CO_2 emissions in fiscal 2000, we used the data on a representative transport route (from Suzuka Distribution Center to Tobu Delivery Center). For fiscal 2001 and onwards, we used data on all transport routes.

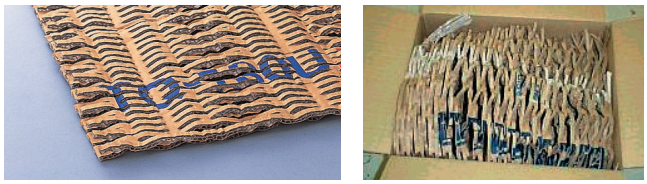
●Total transport distance and total CO_2 emissions



* In the Environmental Report 2002, the total transport distances and total CO_2 emissions were calculated by converting 1 m^3 to 50 kg. In the Environmental Report 2003, however, they were calculated by converting 1 m^3 to 280 kg (standard conversion made in Japan for general transport routes).

Reuse of cardboard as cushioning

In the past, paper containing chemical pulp less than 40% was used as cushioning for packaging products to be delivered to customers. We have, however, reviewed such usage. We now reuse cardboard used for regular outer and inner boxes by cutting it and using it as cushioning, thereby achieving effective use of waste cardboard.



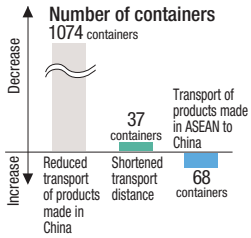
Examples of reused cardboard

Overseas Distribution: Reduction of CO_2 Emissions by 750 ton-CO_2 by Transferring the Overseas Distribution Base

The Casio Group, following the shift of its domestic production sites to China, transferred its overseas marketing and distribution base (warehouses of the International Sales Division) from Singapore to China (Shenzhen) in December 2002. As a result, it is now possible to reduce transport by maritime containers and we expect a reduction of CO_2 emissions by 490 ton-CO_2 in fiscal 2003. Also in the fiscal year, CO_2 emissions will decrease by another 260 ton-CO_2 as a result of reduced air transport. In total, CO_2 emissions will be decreased by 750 ton-CO_2.

Breakdown of reduction in CO_2 emissions

●Transport by ocean containers



Effect

Expected reduction in CO_2 emissions by 260 ton-CO_2

(Method to calculate the reduction in CO_2 emissions based on the number of containers)

1. Decide the number of containers required to transport the predicted production (m^3)
2. CO_2 reduction (in tons) = predicted production (m^3) x transport distance (km) x 280* (kg/m^3) x 13** (g/ton-km) x 10^{-6}

*The volume is converted to weight assuming that 1 m^3 is equivalent to 280 kg.
**CO_2 emissions from the transport over 1 km of goods weighing 1 ton

●Air transport

As in ocean transport, it is no longer necessary to transport products made in China to Singapore by air.

Effect

Expected reduction in CO_2 emissions by 490 ton-CO_2

(Method of calculating the reduction in CO_2 emissions in air transport)
Reduction in CO_2 emissions (in tons) = Predicted production (m^3) x transport distance (km) x 280* (kg/m^3) x 402** (g/ton-km) x 10^{-6}

*The volume is converted to weight assuming that 1 m^3 is equivalent to 280 kg.
**CO_2 emissions per kilometer due to the transport of products weighing 1 ton.

●Other measures to promote the reduction of CO_2 emissions

- We use a port nearer to Shenzhen than to Hong Kong to shorten the transport distance by trucks.
- For digital cameras shipped to North America, they are now directly delivered to mass merchandisers located in the region instead of being first delivered to warehouses of Casio Inc., thereby reducing the transportation distance by trucks.

Green Procurement and Purchasing

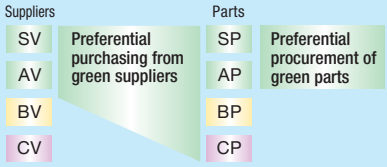
We are promoting green procurement by preferentially purchasing eco-friendly parts and components and materials from suppliers and green purchasing by preferentially purchasing eco-friendly office supplies and consumables.

Green Procurement Activities

The Casio Group preferentially buys parts with less environmental impacts from environmentally conscious suppliers based on the Casio Group Green Procurement Standard Manual.

We ask all our suppliers of products, parts, and raw materials to assess the environmental management systems implemented at their factories in light of ISO 14001 as well as the content of chemical substances, energy- and resource-saving qualities, and recyclability of their products to be purchased by the Casio Group. We started this survey in fiscal 2000. The results reported from suppliers are stored in our database to be used as standards for the preferential procurement of green parts and for the development of green products.

Ranking of "green suppliers" and "green parts"

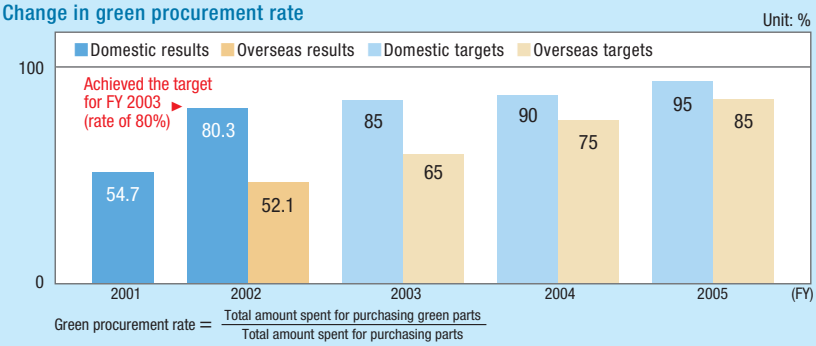


We rank suppliers and the parts to be supplied by them according to the levels of their eco-friendliness and use the results as a standard for preferential procurement.

FY 2002 Achievements

The Casio Group had been making efforts to achieve its target of increasing its domestic green procurement rate to 80% in fiscal 2003 as set in its Environmental Action Plan. As of the end of fiscal 2002, the rate reached 80.3%, thus we could achieve the target one year earlier than planned. Also at our overseas sites, we have been conducting green procurement activities based on the same standards as those set domestically.

Change in green procurement rate



$$\text{Green procurement rate} = \frac{\text{Total amount spent for purchasing green parts}}{\text{Total amount spent for purchasing parts}}$$

Future Measures

The current green procurement survey targets the parts already registered with the Casio Group, but in the future, we will also conduct advance surveys on parts that are likely to be adopted by engineers in the Group. We intend to establish a system to develop new products as green products, eliminating the use of specified chemical substances certainly. Also, we will improve the usability of our green parts database so that our engineers can efficiently utilize available environmental information about parts.

Green Purchasing Activities

The Casio Group has introduced the CATS e-P system for the central management of purchasing activities regarding indirect materials (office supplies, fixture for factories, consumables, PC peripheral equipment, software, etc.). Products that are useful for environmental conservation are introduced to employees in online catalogs via the company's Intranet.

We preferentially introduce the products that meet our eco-standards in these online catalogs, certifying them with the Casio Environmental Mark. In this way, employees in charge of purchasing goods can preferentially choose Casio Environmental Mark-certified products.

Also, for recyclable toners and paper chosen based on the similar eco-standards as internally recommended products, there are special catalog pages for them so that those responsible can easily select and purchase eco-compatible toners and paper. As a result, our green purchasing rate increased to 7.6% during the period from November 2002 to March 2003.

Clean & Green Mark

Screen of the CATS e-P system

Recovery and Recycling

We are recovering and recycling end-of-life products and consumables for the effective use of resources.

Recovery of Information Devices from Corporate Customers

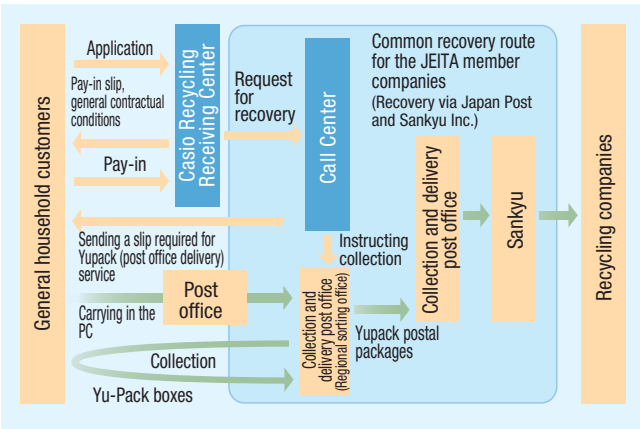
We established and commenced operation of a recovery and recycling system for end-of-life information devices one year ago. For the initial year (April 2002 to March 2003), remarkably, we could outperform the targeted recycling rates stipulated by law, as shown in the following table describing the recovery results per item.

		Main body	Monitor	Printer	Dot/page/other
		PC/OC	CRT/LCD	Dot/Page/other	ECR/POS/UPS/other
Amount recovered		12.2 tons	5.1 tons	18.1 tons	4.5 tons
Recycling	Amount recycled	11.0 tons	4.0 tons	15.8 tons	4.0 tons
Recycling	Recycling rate	90.1%	78.0%	87.0%	88.0%
Targeted recycling rate		50%	55%	—	—

Recycling rate = Amount recycled / Amount recovered

Recovery of PCs from Households

An ordinance issued on April 7, 2003 under the Law for the Promotion of Utilization of Recyclable Resources obliges the recovery and recycling of PCs used in households. We will establish a system to recover and recycle end-of-life PCs from households by October 1, 2003, when the ordinance will be enforced, according to recommendations made by the Japan Electronics and Information Technology Industries Association (JEITA).



Recovery of Tape Cartridges of Electronic Stationery "NAME LAND"

In June 2002, we expanded our recovery and recycling system to all our product items (excluding some special ones) in addition to the recovery of used cartridges of our label printer "NAME LAND" and of used CD-R printer ink ribbon cassettes. In addition to corporate users, we aggressively promote our recovery and recycling system targeting general households through sales stores.

	Result	Weight (in tons)
Quantity recovered	42,500 pieces	1.35

Recovery of Drums and Toner-set

We recover used page printer drums and toners and reuse their components.

In fiscal 2002, we recovered and recycled them as shown in the following table:

			FY 2001	FY 2002
Amount processed			322.3 tons	276.9 tons
Recycling	Reuse	Amount recycled	89.7 tons	98 tons
Recycling	Reuse	Recycling rate	27.8%	35.4%
Recycling	Recycling	Amount recycled	225.2 tons	179 tons
Recycling	Recycling	Recycling rate	69.8%	64.6%

Recovery of Rechargeable Batteries

Casio Computer is a member of JBRC. We place rechargeable battery recovery boxes at our service stations and other locations and ask dealers of our products and consumers to cooperate in our activity to recover and recycle rechargeable batteries. The following table shows the results in fiscal 2002.

	NiCd battery	Nickel battery	Lithium-ion battery	Small sealed lead-acid battery
Amount recovered	385 kg	0 kg	230 kg	75 kg

Measures to Deal with the WEEE & RoHS Directives

The WEEE & RoHS Directives enacted in Europe were promulgated and came into effect in February 13, 2003. Accordingly, the EU member states are required to enact relevant domestic laws by August 2004, and manufacturers and importers/merchandisers of electric and electronic devices targeted by the Directives are required to recover and recycle end-of-life products and to discontinue the use of specific substances in their products. The Casio Group is making preparations to establish a recovery and recycling system to comply with the WEEE Directive in Europe, collecting and analyzing information on legislation in each of the EU member countries. Also, in order to achieve our recycling goals, we are conducting more stringent assessments on eco-designs to ensure proper treatment after recovery and recycling. In addition to the promotion of 3Rs (reduce, reuse, and recycle) designs, one of our targets is to discontinue the use of substances specified by the RoHS Directive (lead, mercury, cadmium, and hexavalent chromium).

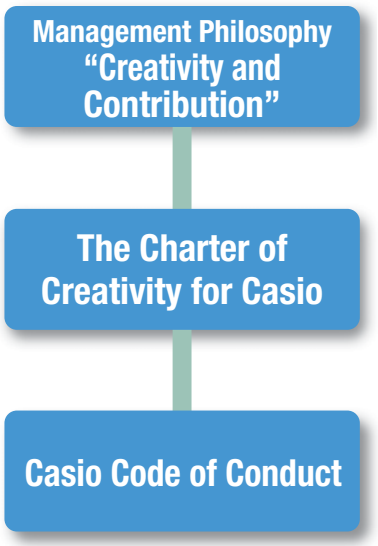
*Of the substances specified by the RoHS Directive, we already discontinued the use of PBB and PBDE.

Implementation of Our Management Philosophy

All employees of the Casio Group are making efforts to implement the Group's management philosophy and to fulfill its corporate social responsibility.

The Charter of Creativity for Casio

For every employee of the Casio Group to implement the management philosophy of "Creativity and Contribution," we establish the Charter of Creativity for Casio on June 1, 2003, on the anniversary of the foundation of Casio Computer.



The Charter of Creativity for Casio

First Chapter

We will value creativity, and ensure that our products meet universal needs.

Overview of the First Chapter

Valuing "creativity" means fulfilling our mission to develop and market unique products and services that the world has never seen before.

We will do our best to satisfy the universal and fundamental aspirations and desires people have, such as "we want calculating to be easy," "we want to make music," or "we want to have easy access to all kinds of information." We will continue to create products that meet people's needs and enable ever greater convenience at all times and places, and in every kind of environment.

Second Chapter

We will strive to be of service to society, providing customers with delight, happiness, and pleasure.

Overview of the Second Chapter

Valuing "contribution" means enriching people's lives all over the world by developing and marketing unique products and services, thus contributing to social progress.

We will pursue values such as functionality, quality, economy, speed, productivity, ethical practices, safety, and environmental responsibility in developing and marketing our products and services. In doing so, we will provide people with greater-than-expected delight and ever-increasing excitement.

Third Chapter

We will back up our words and actions with trustworthiness and integrity, and work as professionals.

Overview of the Third Chapter

We will never stop striving to improve ourselves. As professionals, we will think, act, and pursue innovation each day, always striving to realize the potential of every opportunity to make further progress.

We will build a corporate culture characterized by fairness, freedom, and dynamism, and maintain our integrity in healthy relationships with society, always conducting ourselves with sincerity and responsibility.

Casio Code of Conduct

Employees of Casio Computer Co., Ltd., and its group companies are expected to conduct themselves always in an orderly manner, both in business and in their private lives. This Code of Conduct is meant to assist each employee to act responsibly as a member of society, thus actively contributing to social progress.

1. Basic Policies

We will conduct ourselves with pride and responsibility as members of the CASIO Group, which aims to satisfy and delight customers by developing and marketing high-quality products and services in line with the corporate creed of "Creativity and Contribution." At the same time, we will conduct our daily activities responsibly as members of society. As basic requirements, we will:

1) Provide unique and high-quality products to the market, acquire the industry's most advanced technologies, skills and knowledge, and continuously improve ourselves;
2) Enhance our credibility both within and outside the Group by promoting mutual understanding, participation and cooperation;
3) Comply with in-house and external laws and regulations and act as good citizens and good businesspersons;
4) Contribute to society at large and to the development of the Group by fulfilling our roles and achieving our corporate targets; and
5) Make efforts to build better relationships with our customers and suppliers.

2. Code of Conduct

2-1. Compliance with Laws and Regulations

We will act in compliance with social norms as members of society, understand the laws and regulations, both external and in-house, that we are required to comply with in our business, and will act in a sincere and orderly manner.

2-2. Respect for Human Rights

We will respect others, valuing cooperation without any discrimination. We will respect the human rights of all people, eliminate any discriminative words, actions or harassment related to gender, belief, religion, race, social status or physical abilities, and will protect mutual privacy.

Some areas of great concern to society:

- Sexual harassment
- Harassment based on authority
- Criticism or enforcement of religions and beliefs
- Pervasive and discriminative actions in respect to race, origin, family, etc.

2-3. Separation of Personal Affairs from Business

We will not use the authority or position we are given in the course of our business to offer preferential treatment to specific customers, nor be entertained or given presents in return for such preferential treatment. We will refrain from all anti-social activities, clearly separating our personal affairs from business.

Some areas of great concern to society:

- Giving or receiving money, goods, and entertainment in association with business
- Providing benefits to specific companies
- Insider dealing
- Private use of the equipment or furnishings of the company (excessive use of phone and e-mail for private purposes)

2-4. Treatment of Confidential Information

We will understand the standards for the management of confidential information and will treat the company's information with greatest care.

Some areas of great Concern to society:

- Information about intellectual property such as inventions, findings, designs, and trademarks
- Confidential technical information regarding unannounced products, new technologies, etc.
- Confidential management information regarding personnel affairs, sales and trade terms, etc.
- Personal information leading to the identification of specific suppliers, customers, etc.

2-5. Environmental Conservation

We will be aware of the importance of environmental conservation and will voluntarily and aggressively promote daily activities to protect the global environment.

Some areas of great concern to society:

- Measures to prevent global warming
- Waste reduction
- Measures to expand recycling and reuse
- Reduction/discontinuance of the use of hazardous substances

2-6. Product and Service Quality

We will constantly strive to improve in order to develop and provide products and services that function reliably and are of premium quality to customers.

2-7. Disclosure of Corporate Information

We will aim to win greater social trust in our open and transparent management by disclosing corporate information appropriately and in a timely fashion, and promoting communications with all our stakeholders, including shareholders.

2-8. Maintenance of Social Order

We will respond firmly to anti-social activities for the sake of stability and maintenance of social order.

Some areas of great concern to society:

- Acceptance of unjustifiable provision of money and goods
- Regular purchase of goods or subscription to magazines offered by certain organizations

2-9. Contribution to Local Communities in which We Operate

We will contribute to the sound development and harmony of local communities in our daily activities as members thereof.

Promotion of Quality

Since the foundation of Casio Computer, we have been conducting our business under the never-changing management philosophy of "Creation and Contribution." We contributed to society by creating unique products not found in the world and as a result could achieve significant growth.

The following shows our activities to ensure quality as the basis for pleasing and impressing customers with Casio brand products.

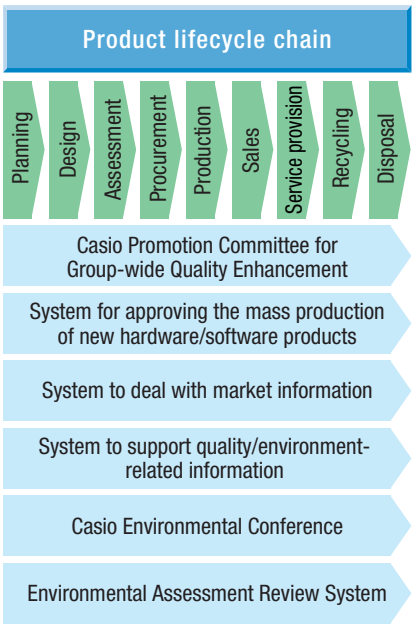
Philosophy of quality control

We regard "Casio quality" as the results of our activities for usability such as performance, functionality, operability, and design as well as for safety, economy, service, environmental conservation, and social contribution, and pursue ever higher quality as our philosophy of quality control.

Quality assurance activities

To ensure the quality of our products and services, we set various in-house standards for each of our business processes, including those for product planning, design, assessment, procurement of materials, production, sales, service provision, and product recycling and disposal. We operate the system to fully comply with the standards to maintain and improve our quality.

Process and management systems for product development



Social Contribution Activities

Support for the Campaign of the Dolphin, Whale, and Human Fund

Since the International Dolphin & Whale Conference held in 1994, we have been supporting dolphin and whale research activities. In fiscal 2002, we supported the third campaign of the Dolphin, Whale, and Human Fund of the International Cetacean Education & Research Centre Japan (I.C.E.R.C. Japan) and released the Dolphin & Whale Eco-Research Network models for G-SHOCK and Baby G. We donated a portion of their sales to dolphin and whale research institutions all over the world to support researchers in conducting educational and research activities.

In addition to the activities related to the Fund, I.C.E.R.C. Japan is also conducting various activities, including an exhibition called the "Dolphin & Whale Station," I.C.E.R.C. Lectures given by invited researchers, and research to identify bottlenose dolphins in Mikurajima project conducted jointly with a dolphin association located in Mikurajima. In July 2003, I.C.E.R.C. Japan held Tokyo Dolphin & Whale Station 2003.

TOKYO IRUKA KUJIRA STATION 2002, where we introduced the Dolphin, Whale and Human Fund activities and our special watch models released for supporting these activities.

Dolphin & Whale Eco-Research Network models (Released in June 2003)

Activities of group companies

Some group companies conducted cleaning activities as shown below.

Site	Activity	Details	Number of participants	Date
Kofu Casio	Implementation of "Clean-up Day"	Cleaning activities extending over the company and the surrounding roads	119 persons	June 28, 2002
		Cleaning the area surrounding the public hall in the Ichohata District	116 persons	December 28, 2002
Kochi Casio	Gathering weed	Cleaning up the area surrounding the Kokubu River	38 persons	February 2, 2003

Gathering weed in the area surrounding the Kokubu River

Activities of the Casio Science Promotion Foundation

The Casio Science Promotion Foundation, since its foundation in 1983, has been supporting advanced and original research, especially in promising areas. In fiscal 2002, the Foundation spent a total of 55,640,000 yen as subsidy to a total of 42 research projects. Commemorating the 20th anniversary of its foundation, the Foundation newly included research on fuel cells in its target, as a special research theme to be supported by the Foundation. Fuel cells are one of the scientific technologies attracting much attention.

Ceremony to present a research subsidy

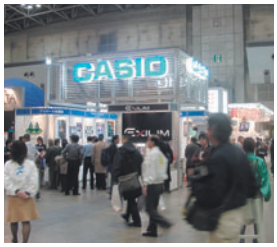
Environmental Communication

We disclose environmental information through our environmental reports and Web site as environmental communications with our stakeholders.

Participation in the Eco-Products Exhibition

The Eco-Products Exhibition is the largest exhibition for environmentally-conscious products and services in Japan. We have been participating in the exhibition since its first organization. At Eco-Products 2002, we exhibited Casio Green Products meeting the strict in-house standards that were developed based on the concept of light weight, thin, short, compact and low power consumption as well as Japan's Eco Mark-certified products, and introduced the environmental activities of the Casio Group.

*We also plan to participate in Eco-Products 2003.



Publication of Environmental Reports

We began preparing annual environmental reports in 1999. Previous issues, as well as the latest one, can be viewed on World Casio Web site.

http://www.casio.co.jp/env/activity/report.html

Information Provided on the Web

For the entire environmental activities conducted by the Casio Group, please refer to World Casio Web site, which includes the latest information about the Group's environmental activities (www.casio.co.jp/env/).

Also, the Web site provides site-specific data and performance data concerning the Group's domestic and overseas sites that could not be included in the environmental reports for lack of space.

http://www.casio.co.jp/env/activity/performance.html

Publication of Site Reports

In 2002, Kofu Casio became the first Group company to publish an environmental report of its own. As a member of the Casio Group, this company is determined to achieve its environmental targets and promote communication with its stakeholders, especially with local communities.

Activities of Group Companies

Site	Activity	Details	Number of participants	Date
Kofu Casio	Lecture on the environment	"Starry Sky Promenade – Looking at the beautiful night sky" ● Lecture on starry sky and light pollution* by Toshio Ushiyama, photographer and environmental counselor *Light pollution: Light pollution destroys the night sky by too much artificial lighting, thereby making it difficult to see stars at night.	61 persons	July 27, 2002
	Participation in Ecomesse Yamanashi 2002	Exhibition and exchange meeting on the environment held by citizens of Yamanashi Prefecture	Approximately 2,000 persons	August 4, 2002
	Visit to the company by university students	Demonstration of environmental management systems and environmental activities implemented by the company	Students from a university	March 19, 2003
Casio Computer's Head Office	Visit to the company by students including those on school trips	Untold story about the development of the QV-10 digital camera, an introduction to Casio products, and a corporate profile	Students from 1 elementary school, 14 junior high schools, and 1 graduate school	April 2002 to March 2003

Explaining the development history of the digital camera

History of the Casio Group's Environmental Conservation Activities

Since the establishment of the Casio Environmental Conservation Committee in 1991, we have been constantly implementing measures for environmental conservation.

Environmental Activities

Month	Casio Group's environmental conservation activities	Environmental trends (in Japan unless otherwise specified)
8	Establishes the Casio Environmental Conservation Committee	Keidanren Global Environment Charter established
1	Formulates the Casio Environmental Charter and the Casio Voluntary Plan for the Environment	The Basic Environment Law enacted
12	Discontinues the use of specified CFCs and 1,1,1,-trichloroethane	
10	Revises the Casio Voluntary Plan for the Environment (2nd Edition)	The Basic Environmental Plan and the Product Liability Act enacted
4	Publishes a brochure on the environment	The Law for Promotion of Sorted Collection and Recycling of Containers and Packaging enacted
4	Revises the Casio Voluntary Plan for the Environment (3rd Edition)	ISO 14000 series started
2	Introduces the Group's environmental activities on the Web site	The Environmental Impact Assessment Law enacted
5	Revises the brochure on the environment	
7	Revises the Casio Voluntary Plan for the Environment (4th Edition)	The Home Appliances Recycling Law enacted
6	Formulates the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative	The Law Concerning Special Measures against Dioxins enacted The Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) enacted The Environmental Impact Assessment Law enforced
9	Establishes the Green Procurement Guidelines	
	Revises the Casio Voluntary Plan for the Environment (5th Edition)	
10	Starts the recovery of tape cartridges of electronic stationery "NAME LAND" from corporate users	
12	Publishes the Environmental Report 1999	
	Participates in Eco-Products 1999	
3	Completes the acquisition of ISO 14001 certification at all the domestic production sites	The Construction Materials Recycling enforced
4	Introduces environmental accounting	The Law Concerning Special Measures against Dioxins enforced
6	Starts the full-scale recovery of printer drums and toner sets	The Basic Law for Establishing a Recycling-Based Society enacted
8	Publishes Environmental Report 2000	The Waste Management and Public Cleansing Law amended
11	Publishes the Green Procurement Standard Manual and holds explanatory meetings for suppliers	The Law for the Promotion of Utilization of Recyclable Resources enacted
	Revises the Casio Voluntary Plan for the Environment (6th Edition)	The Law for Promotion of Sorted Collection and Recycling of Containers and Packaging enforced
12	Completes the acquisition of ISO 14001 certification at Casio Computer's four sites	
	Participates in Eco-Products 2000	The Law on Promoting Green Purchasing enacted
6	Revises the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative	The Law for the Promotion of Utilization of Recyclable Resources enforced The Waste Management and Public Cleansing Law enforced The Home Appliances Recycling Law enforced The Law on Promoting Green Purchasing enforced The Law Concerning Special Measures against PCB Waste enacted and enforced The Basic Law for Establishing a Recycling-Based Society enforced
	Implements Casio Green Products 30 (C.G.P. 30)	
	Starts recycling the documents discarded by Hamura R&D Center as materials for boxes for timepieces	
8	Publishes the Environmental Report 2001	
9	Joins JBRC and begins recycling secondary rechargeable batteries	
12	Casio (Taiwan) and Casio Soft acquire ISO 14001 certification	
	Participates in Eco-Products 2001	
2	Launches a system to recover and recycle end-of-life PCs and information/communications equipment from corporate users	The Construction Recycling Law enforced Kyoto Protocol ratified The Soil Pollution Control Law enacted The Johannesburg Summit held (by the United Nations) The PRTR Law enforced
	Casio Electronics (Shenzhen) acquires ISO 14001 certification	
3	Three sites of the Group (Head Office and Ichinomiya factory of Kofu Casio and Casio Micronics in Yamanashi) achieve zero emissions	
4	The entire Group discontinues use of CFC substitutes	
	Casio Electronics (Zhongshan) acquires ISO 14001 certification	
5	The Head Office of Casio Techno acquires ISO 14001 certification	
6	Starts the recovery of tape cartridges of electronic stationery "NAME LAND" from general consumers	
	Revises the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative	
8	Publishes the Environmental Report 2002	
12	Revises the Casio Voluntary Plan for the Environment (7th Edition), participates in Eco-Products 2002	
3	Casio Electronic Manufacturing achieves zero emissions	The Soil Pollution Control Law enforced
6	Revises the Casio Group's Environmental Action Plan "Clean & Green 21" Initiative	The WEEE & RoHS Directives come into effect (in Europe)

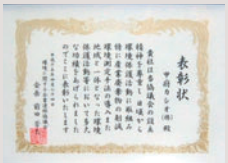
Environmental Conservation Awards

Year	Month	Company/Site	Award/commendation	Awarding body
1999	2	Casio Computer's Head Office	Outstanding Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Kanto Region Electricity Usage Rationalization Committee
2000	2	Hamura Research & Development Center	Best Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Kanto Region Electricity Usage Rationalization Committee
	11	Tokyo Product Control and Technical Center	Award for Distinguished Service by Hazardous Materials Handling Personnel	Director of Fire Prevention Division, Tokyo Metropolitan Fire Department
2001	2	Tokyo Product Control and Technical Center	Award for Excellence in Activities to Reduce Electricity Use	Kanto Region Electricity Usage Rationalization Committee
2002	1	Kochi Casio	2001 Award for Factory Energy Management Excellence (Electricity Division) Agency of Natural Resources and Energy Director-General's Commendation	Agency of Natural Resources and Energy, Ministry of Economy, Trade and Industry
	2	Hamura Research & Development Center	2001 Incentive Prize for Reducing Electricity Use	Tama Area Electricity Usage Rationalization Committee
	5	Casio Computer's Head Office	Excellence Award for the Reduction and Reuse of Waste at Large-Scale Sites and Buildings	Shibuya City, Tokyo
2003	2	Hamura Research & Development Center	Award for Excellence in Activities to Reduce Electricity Use	Kanto Region Electricity Usage rationalization Committee
	4	Kofu Casio	Commendation for excellent corporate environmental activities	Yamanashi Environmental Liaison Council of Companies

TOPICS

Kofu Casio commended by the Yamanashi Corporate Environmental Liaison Council

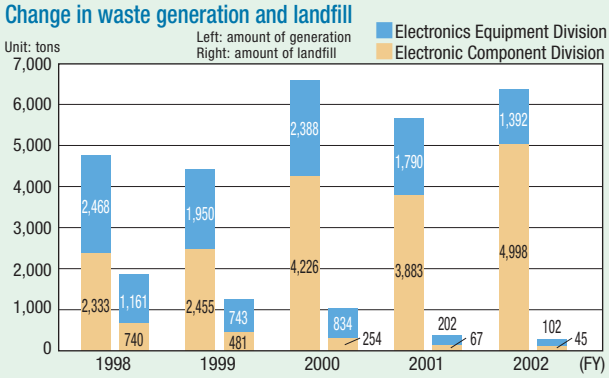
In April 2003, Kofu Casio became the first company to be commended for its continuous environmental efforts by the Yamanashi Environmental Liaison Council of Companies. The Council was founded ten years ago following the environmental declaration made by the former Governor of Yamanashi Prefecture. It is an organization led by the private sector with a membership of 372 companies. The Council aims to contribute to the solution of environmental problems encountered by companies and to the development of Yamanashi into an environmental metropolis through environmental activities autonomously conducted by individual companies.



Environmental Performance Data

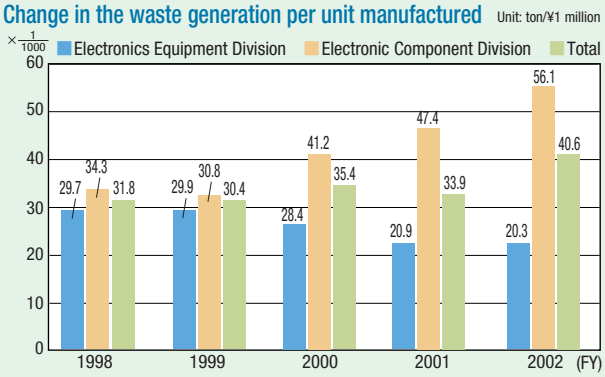
The following gives environmental performance data on items with large environmental impact.

Change in waste generation and landfill



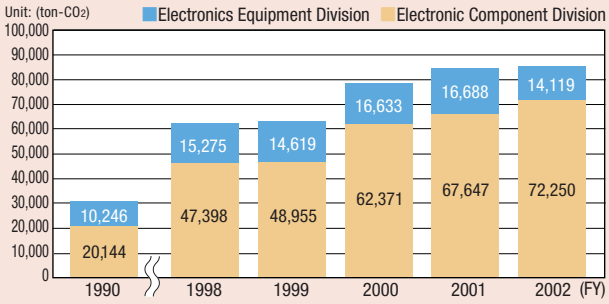
Change in the waste generation per unit manufactured

Unit: ton/¥1 million



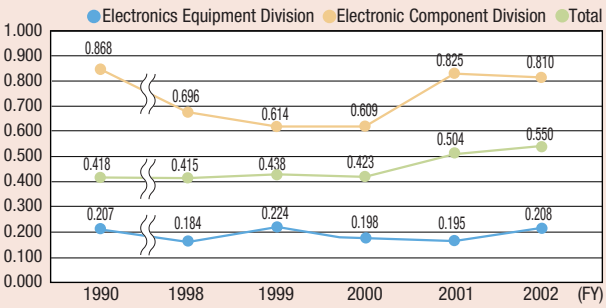
With increased production volumes, waste generation is also increasing. The entire company, however, promotes appropriate reuse and recycling to achieve "zero emissions" in fiscal 2005.

Change in CO_2 emissions



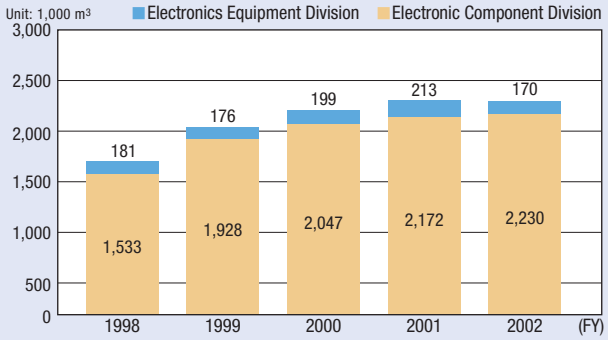
Change in CO_2 emissions per unit manufactured

Unit: ton/¥1 million



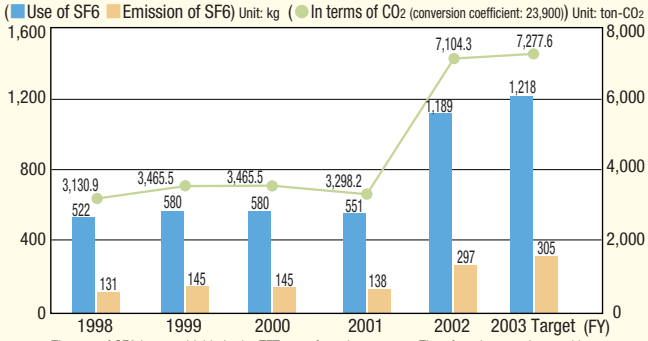
Since 1990, the total CO_2 emissions have been increasing due to the growth of the Electronic Component Division, which uses a great deal of energy for certain operations (around-the-clock operation of clean rooms, pure water/wastewater treatment facilities, etc.). Over the past two years CO_2 emissions have increased. This is due to the expansion of factories in the Electronic Component Division and the subsequent trial operation and adjustment of these factories. We, however, are making efforts to reduce emissions by introducing cogeneration systems and other highly efficient equipment.

Change in the use of water resources



Use of pure water in the cleaning process of the Electronic Component Division is increasing in accordance with the growth of the Division. We are, however, attempting to decrease usage by adopting a water recycling system. In fiscal 2002, 177,400 m3 of water was recycled.

Use and emission of SF6 greenhouse gas and emission amounts in terms of CO_2



The use of SF6 is unavoidable in the TFT manufacturing process. Therefore, in accordance with an increase in production, the use and emission of SF6 are both increasing. To meet this challenge, we are examining the introduction of optimal system for breaking down and detoxifying SF6.

Data on Release and Transfer Collected Based on the PRTR Law

(Unit: tons)

Type I chemical substances specified in the PRTR Law	Substance No.	FY 2001											FY 2002									
		Sites using one or more tons of the substance	Amount handled	Amount released				Amount transferred		Consumption	Amount removed	Amount recycled	Sites using one or more tons of the substance	Amount handled	Amount released				Amount transferred		Consumption	Amount removed	Amount recycled
				Atmosphere	Public waters	Soil within the premises	Landfill within the site	Sewage	Waste						Atmosphere	Public waters	Soil within the premises	Landfill within the site	Sewage	Waste			
Antimony and its compounds	25	1	2.84						0.14	2.7			1	2.25							2.03		0.22
Ethyl benzene	40	1	5.21									5.21	1	13.23						13.23			
Ethylene glycol	43	1	1.78						1.78				1	1.98						1.98			
Xylene	63	2	43.36	5.94					37.42				1	47.07	0.92					46.15			
2-ethoxyethyl acetate	101	3	9.85	3.27					6.59				2	16.00	5.02					6.38			4.60
1,1-dichloro-1-fluoroethane	132	1	3.14	2.54								0.60	Casio Group discontinued usage										
Thiourea	181	2	9.46						9.46				2	12.22						12.22			
Water-soluble copper salt	207	2	23.79		0.04				23.75				2	17.41		0.03				14.48			2.90
Toluene	227	1	2.01	2.01									1	2.73	2.72					0.01			
Lead and its compounds	230	1	1.32							1.28		0.04	1	2.49							2.31		0.17
Hydrogen fluoride and its water-soluble salts	283	1	6.89		3.83							3.07	1	11.17		6.15							5.03

*The Casio Group does not use Specified Class I chemical substances. *Blank column: meaning that the amount handled is zero *In fiscal 2002, compared with fiscal 2001, the amount handed increased due to an increase in production by the Electronic Component Division. Nonetheless, by introducing closed handling system to prevent chemical substances from dispersing into the atmosphere, the amount released into the atmosphere was reduced while the amount wasted and recycled increased.

Site-Specific Data

Domestic Sites

Environmental data on the Casio Group

Electricity: 147,246,000 kWh
Fuel: 9,475.7 kℓ (in terms of crude oil)
Water: 2,399,700 m³
Chemical substances (specified by the PRTR Law): 126,745.7 kg

INPUT

Casio Group (as a whole)

OUTPUT

CO_2	86,400 tons
NOx	24.2 tons
SOx	10.8 tons
Soot and dust:	1.1 tons
Effluent:	2,029,400 m³
BOD	18.0 tons
Waste generation:	6,390.4 tons
Landfill:	147.6 tons
Reduction: Simple incineration:	169.7 tons
Reduction: Heat recovery incineration:	354.8 tons
Reduction: Waste reduction by dehydration:	2,568.7 tons
Reuse and recycling:	3,149.5 tons
Ratio of landfill to waste generation:	2.3%
Recycling rate:	49.3%

Data obtained from the four sites of the Electronic Component Division and the eight sites of the Electronics Equipment Division.

Electronic Component Division

Share in the entire Casio Group

82% Electricity: 120,020,000 kWh
89% Fuel: 8,460.6 kℓ (in terms of crude oil)
93% Water: 2,229,600 m³
98% Chemical substances (specified by the PRTR Law): 124,260.7 kg

INPUT

Electronic Component Division (Total)

OUTPUT

		Share in the entire Casio Group
CO_2	72,200 tons	84%
NOx	22.7 tons	94%
SOx	7.5 tons	69%
Soot and dust:	0.9 tons	82%
Effluent:	1,882,800 m³	93%
BOD	10.3 tons	57%
Waste generation:	4,998.4 tons	78%
Landfill:	45.5 tons	31%
Reduction: Simple incineration:	0.1 tons	77%
Reduction: Heat recovery incineration:	354.8 tons	100%
Reduction: Waste reduction by dehydration:	2,479.2 tons	97%
Reuse and recycling:	1,987.9 tons	63%
Ratio of landfill to waste generation:	0.9%	
Recycling rate:	39.8%	

The Electronic Component Division has production system and operates clean rooms and water (pure water/wastewater) treatment facilities around the clock. These facilities consume significant amounts of energy.

2420, Kureda, Nangoku-shi, Kochi Prefecture 783-0062

Electricity: 48,670,000 kWh
Fuel: 4,042 kℓ (in terms of crude oil)
Water: 854,000 m³
Chemical substances (specified by the PRTR Law): 11,588 kg

INPUT

Kochi Casio

OUTPUT

CO_2	30.3 tons
NOx	12.5 tons
SOx	4.9 tons
Soot and dust:	0.5 tons
Effluent:	763,800 m³
BOD	5.2 tons
Waste generation:	996.4 tons
Landfill:	28.4 tons
Reduction: Simple incineration:	0.1 tons
Reduction: Heat recovery incineration:	0.0 ton
Reduction: Waste reduction by dehydration:	0.0 ton
Reuse and recycling:	968.0 tons
Ratio of landfill to waste generation:	2.9%
Recycling rate:	97.1%

Kochi Casio manufactures TFT LCDs on a 24-hour basis and requires a significant amount of energy for the operation of the production system, air conditioners for clean rooms, etc.

217, Icchohata, Tamaho-cho, Nakakoma-gun, Yamanashi Prefecture 409-3896

Electricity: 15,890,000 kWh
Fuel: 1,741 kℓ (in terms of crude oil)
Water: 489,000 m³
Chemical substances (specified by the PRTR Law): 3,481 kg

INPUT

Kofu Casio (Head Office)

OUTPUT

CO_2	11.4 tons
NOx	4.5 tons
SOx	0.3 tons
Soot and dust:	0.0 ton
Effluent:	391,400 m³
BOD	0.6 tons
Waste generation:	861.0 tons
Landfill:	2.4 tons
Reduction: Simple incineration:	125.0 tons
Reduction: Heat recovery incineration:	64.9 tons
Reduction: Waste reduction by dehydration:	137.2 tons
Reuse and recycling:	531.5 tons
Ratio of landfill to waste generation:	0.3%
Recycling rate:	61.7%

Kofu Casio manufactures TN-type LCDs on a 24-hour basis and requires significant amounts of energy for the operation of the production system, air conditioners for clean rooms, etc.

3-10-6, Imai, Ome-shi, Tokyo 198-8555

Electricity: 20,520,000 kWh
Fuel: 1,202 kℓ (in terms of crude oil)
Water: 273,000 m³
Chemical substances (specified by the PRTR Law): 73,698 kg

INPUT

Casio Micronics (Ome)

OUTPUT

CO_2	11.9 tons
NOx	3.5 tons
SOx	1.4 tons
Soot and dust:	0.0 ton
Effluent:	231,600 m³
BOD	2.4 tons
Waste generation:	430.8 tons
Landfill:	10.1 tons
Reduction: Simple incineration:	0.0 ton
Reduction: Heat recovery incineration:	277.4 tons
Reduction: Waste reduction by dehydration:	88.3 tons
Reuse and recycling:	55.0 tons
Ratio of landfill to waste generation:	2.3%
Recycling rate:	12.9%

Casio Micronics operates W-CSP and COF production system around the clock and uses a large number of chemicals in the W-CSP production process. For the use of water, the plant is reducing usage by recycling water used in the cleaning process.

About Data

Domestic sites

●Energy consumption and the coefficient used for calculating the consumption in terms of CO_2 emissions

We tabulated the data in line with the method set forth in the electric and electronics industry's voluntary plan for energy consumption and used the coefficient applied in the plan.

●Waste

We tabulated the data according to the definitions for emmissions and recycling of waste prescribed by the electric and electronics industry.

●Air and water

We used the measurement certification data based on the Air Pollution Control Law and the Water Pollution Control Law.

●Reuse and recycling

We tabulated the amount reused and recycled after intermediate processing.

●Recycling rate

$$\text{Recycling rate (\%)} = \frac{\text{Amount of reuse and recycling (tons)}}{\text{waste generation (tons)}} \times 100$$

Overseas sites

●Energy consumption

For the coefficients to calculate our energy consumption in each country in terms of CO_2 emissions, we used the values shown in the report on the estimation of CO_2 emissions per unit manufactured in the power generation sector of each country published by the Japan Electrical Manufacturers' Association (JEMA) in March 2002.

●Chemical substances

We collected data on the ozone layer depleting substances, chlorine organic solvents, and lead solder.

●For the sites and regulated chemical substances (SOx, NOx, soot and dust, etc.) not listed here, please refer to our Web site: www.casio.co.jp/env/activity/perfomance.html

TOPICS

Construction of a new building at the Hachioji Laboratory of Casio Computer, and reduction of CO_2 emissions

The new building at the Hachioji Laboratory, which will be completed in November 2003, is equipped with an air conditioning system that utilizes a building energy management system (BEMS), chilled/hot water storage, and natural ventilation, and uses highly insulated window frames and external materials. As a result, within the building, compared to the same area in the existing building, CO_2 emissions will be reduced by 25%.

Kochi Casio's new building achieves a 20% reduction in energy consumption

In Kochi Casio's new building, which adopts power-saving fan filter units, energy-saving (Hf type) lighting equipment, etc., energy consumption will be reduced to 80% of that normally required for the same production output in the same floor space.

Overseas Sites

Domestic Electronics Equipment Division

Electronics Equipment Division (Total)

		Share in the entire Casio Group
Electricity: 27,226,000 kWh		18%
Fuel: 1,015.1 kℓ (in terms of crude oil)		11%
Water: 170,100 m³		7%
Chemical substances (specified by the PRTR Law): 2,485.0 kg		2%
	CO_2 14,100 tons	16%
	NO_X 1.5 tons	6%
	SO_X 3.3 tons	31%
	Soot and dust: 0.2 tons	18%
	Effluent: 146,600 m³	7%
	BOD 7.7 tons	43%
	Waste generation: 1,392.0 tons	22%
	Landfill: 102.1 tons	69%
	Reduction: Simple incineration: 38.8 tons	23%
	Reduction: Heat recovery incineration: 0.0 tons	0%
	Reduction: Waste reduction by dehydration: 89.5 tons	3%
	Reuse and recycling: 1,161.6 tons	37%
	Ratio of landfill to waste generation: 7.3%	
	Recycling rate: 83.4%	

The Electronics Equipment Division uses less energy than the Electronic Component Division for production system, air conditioners, etc.

Casio Electronic Manufacturing

4084, Miyadera, Iruma-shi, Saitama Prefecture 358-0014

Electricity: 3,110,000 kWh	
Fuel: 11 kℓ (in terms of crude oil)	
Water: 11,000 m³	
Chemical substances (specified by the PRTR Law): 0 kg	
	CO_2 1,400 tons
	NO_X 0.0 ton
	SO_X 0.0 ton
	Soot and dust: 0.0 ton
	Effluent: 10,000 m³
	BOD 0.3 tons
	Waste generation: 239.6 tons
	Landfill: 1.3 tons
	Reduction: Simple incineration: 0.0 ton
	Reduction: Heat recovery incineration: 0.0 ton
	Reduction: Waste reduction by dehydration: 0.0 ton
	Reuse and recycling: 238.3 tons
	Ratio of landfill to waste generation: 0.5%
	Recycling rate: 99.5%

Casio Electronic Manufacturing manufactures page printer-related products and uses a comparatively small amount of energy.

Yamagata Casio

5400-1, Oaza Higashineko, Higashine-shi, Yamagata Prefecture 999-3701

Electricity: 8,820,000 kWh	
Fuel: 533 kℓ (in terms of crude oil)	
Water: 68,000 m³	
Chemical substances (specified by the PRTR Law): 2,485 kg	
	CO_2 5,100 tons
	NO_X 1.1 tons
	SO_X 2.9 tons
	Soot and dust: 0.1 tons
	Effluent: 66,800 m³
	BOD 7.3 tons
	Waste generation: 557.1 tons
	Landfill: 6.3 tons
	Reduction: Simple incineration: 1.8 tons
	Reduction: Heat recovery incineration: 0.0 ton
	Reduction: Waste reduction by dehydration: 0.0 ton
	Reuse and recycling: 549.4 tons
	Ratio of landfill to waste generation: 1.1%
	Recycling rate: 98.6%

Yamagata Casio manufactures timepieces and cellular phones. In addition, it is engaged in molding, which leads to significant power consumption.

Tokyo Product Control and Technical Center

2-229, Sakuragaoka, Higashiyamato-shi, Tokyo 207-8501

Electricity: 2,210,000 kWh	
Fuel: 98 kℓ (in terms of crude oil)	
Water: 18,000 m³	
Chemical substances (specified by the PRTR Law): 0 kg	
	CO_2 1,200 tons
	NO_X 0.0 ton
	SO_X 0.0 ton
	Soot and dust: 0.0 ton
	Effluent: 11,500 m³
	BOD 0.0 ton
	Waste generation: 85.3 tons
	Landfill: 1.3 tons
	Reduction: Simple incineration: 6.1 tons
	Reduction: Heat recovery incineration: 0.0 ton
	Reduction: Waste reduction by dehydration: 0.0 ton
	Reuse and recycling: 78.4 tons
	Ratio of landfill to waste generation: 1.5%
	Recycling rate: 91.9%

The Center is engaged in the development and design of system equipment and uses a relatively small amount of energy.

Electronics Equipment Division

Total of the overseas sites of the Electronics Equipment Division

Electricity: 12,878,000 kWh	
Fuel: 160.3 kℓ (in terms of crude oil)	
Water: 250,900 m³	
	CO_2 11,464.0 tons
	NO_X 1.7 tons
	SO_X 1.1 tons
	Soot and dust: 1.7 tons
	Effluent: 137,000 m³
	BOD 4.5 tons
	Release and transfer of chemical substances 1.2 tons
	Waste generation: 196.5 tons
	Landfill: 112.7 tons
	Ratio of landfill to waste generation: 57.4%

Data obtained from the six overseas sites of the Electronics Equipment Division was tabulated.

Casio Korea

654-4, Bongam-Dong, Masan, Kyung Sang Namdo, Korea

Electricity: 764,000 kWh	
Fuel: 15.2 kℓ (in terms of crude oil)	
Water: 13,500 m³	
	CO_2 400.0 tons
	NO_X 0.0 ton
	SO_X 0.0 ton
	Soot and dust: 0.0 tons
	Effluent: 12,000 m³
	BOD 0.1 tons
	Release and transfer of chemical substances 0.0 ton
	Waste generation: 20.8 tons
	Landfill: 1.9 tons
	Ratio of landfill to waste generation: 9.1%

For the reduction of waste generation, Casio Korea identifies and controls the amount of waste generated by each division. Also, for reducing the use of paper, the company identifies the use of copier paper by division.

Jiu Shui Keng Casio Electronics Factory

Jiu Shui Keng Village, Panyu District, Guangzhou City, PRC.

Electricity: 5,746,000 kWh	
Fuel: 15.6 kℓ (in terms of crude oil)	
Water: 126,500 m³	
	CO_2 5690.0 tons
	NO_X 0.0 ton
	SO_X 0.1 ton
	Soot and dust: 0.1 tons
	Effluent: 37,200 m³
	BOD 1.0 tons
	Release and transfer of chemical substances 0.4 tons
	Waste generation: 22.1 tons
	Landfill: 4.9 tons
	Ratio of landfill to waste generation: 22.2%

Jiu Shui Keng Casio Electronics Factory started to manufacture products using lead-free solder in fiscal 2002. Also, the Factory is taking energy conserva-tion measures through appropriate air conditioning and central management of power supplies.

Also, the company returns packaging materials and boxes for electronic parts to suppliers, thereby reducing the amount of waste generated.

Casio Electronics (Zhuhai)

Xindade Industry Building, Nanping Street, Nanping Town, Zhuhai, GuangDong, CHINA

Electricity: 1,233,000 kWh	
Fuel: 42.2 kℓ (in terms of crude oil)	
Water: 33,700 m³	
	CO_2 1,321.0 tons
	NO_X 0.0 ton
	SO_X 0.2 tons
	Soot and dust: 0.1 tons
	Effluent: 30,400 m³
	BOD 0.4 tons
	Release and transfer of chemical substances 0.2 tons
	Waste generation: 19.7 tons
	Landfill: 0.0 ton
	Ratio of landfill to waste generation: 0.0%

Casio Electronics (Zhuhai) returns packaging materials to suppliers for the reuse and recycling of these materials. Also, the company is conserving energy by regularly turning on/off energy-using equipment.

Independent Message

Tsutomu Iijima,
Representative of the Association
for Environmental Planners

Evaluating the Casio Environmental Report 2003

Capability leading to a sustainable society

Having partially participated in the process of creating the Casio Environmental Report 2003, I am no longer a third party to the report. As part of the process to prepare the 2003 issue, I attended the discussions for Top Management on environmental management in order to understand their commitment to sustainability and the actual technological development promoted at the Casio Group, thinking that one-sided evaluation of the environmental report would not invigorate or accelerate the Casio Group's corporate activities for a sustainable society and that an evaluation of the report should lead to identifying new managerial resources for the contribution to various performance improvements. Through talks with the directors, I was impressed with their earnest commitment to environmental management and their passion for manufacturing products. As highlights of the Casio Environmental Report 2003, the report introduces the Casio Group's management philosophy ("Creation and Contribution"), the Charter of Creativity for Casio, and the Casio Code of Conduct in the pages concerning its social responsibility. This clearly shows that the Casio Group has a unique corporate culture in that it associates creativity with environmental and social contributions.

Aiming to make steady progress by taking a comprehensive approach

For the discontinuance of the use of hazardous substances regulated by environmental laws and regulations, the report announces deadlines for their discontinued usage. For recycling, the Divisions and the Promotion Office are systematically linked and a recovery system is being established as part of an overall social system. For the development of next-generation environmentally compatible products, the Casio Group is making progress towards the commercialization of light weight fuel cells based on its own technology. If commercialized, these fuel cells would greatly contribute to the reduction of environmental impacts. Regarding the dissemination of information to society at large, a wide variety of information, including detailed performance data, is disclosed to the general public through Casio Computer's Web site.

Facing challenges

For future challenges, the environmental report clearly states the targets to be achieved on the appropriate pages. To improve environmental performance, I recommend the Casio Group to hold further dialogues with its stakeholders and actively promote environmental communications, targeting users as well as supply chains. Through creative communication activities, the Casio Group will be able to show its value to society even more clearly and will make further contributions to the development of a sustainable society.

Casio Computer is making efforts to bring about a new quality of life to the ubiquitous society by providing electronics equipment for every lifestyle and business based on its technology to promote light weight, thin, short, compact and low power consumption. Their activities are full of energy and uniqueness and direct us towards the age of comprehensive creativity.

From the Editors

Thank you very much for reading through the Casio Environmental Report 2003, the fifth issue since the commencement of publication of our annual environmental reports.

We target the general public, who are users of Casio products and employees of the Casio Group as the readers of our environmental reports and have been making efforts to make it clear and easy to understand for our readers.

To this environmental report we have added the subtitle "For a sustainable society." As implied by this subtitle, we have created the report with reference to the GRI's Sustainability Reporting Guidelines 2002, beyond the framework of our previous reports which disclosed information about the Casio Group's environmental activities.

In the future, companies will not be able to survive unless they fulfill their social responsibilities in addition to making profits. In view of this, we invited Tsutomu Iijima, a representative of the Association for Environmental Planners, to some discussions by our directors, and the directors expressed their opinions about the environmental activities based on the Casio Group's management philosophy of "Creation and Contribution" from their own perspectives.

We hope that this Environmental Report 2003 will be a help for readers to understand the future direction of the Casio Group, and we would be very happy to receive your opinions and comments on our environmental management activities from our readers.

Staff of Environmental Management Section
Quality and Environment Center
Casio Computer Co., Ltd.

This logo symbolizes the important environmental activities of the Casio Group for the 21st century.

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Published: July 2003