



2001

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Main Issues in Fiscal 2000

1 ISO14001 Certification at Four Casio Facilities

In fiscal 2000, Casio Computer, which is responsible for the design and development of electronic products, sought to acquire ISO 14001 certification at its various facilities. ISO 14001 certification was acquired at the following four facilities: The Tokyo Product Control and Technical Center, The Hachioji Laboratory, The Hamura Research & Development Center, and the Head Office. (>P9)

Certified Casio Facilities

Facilities	Date	Activities, products, or services
Tokyo Product Control and Technical Center	June 2000	Development and design of systems products
Hachioji Laboratory	Oct. 2000	Research and development of electronic devices (LCDs, etc.)
Hamura Research & Development Center	Oct. 2000	Development, design, and materials procurement of electronic timepieces and information equipment, communications equipment, and electronic musical instruments
Head Office	Dec. 2000	Business and building management activities conducted at the Head Office

2 Implementation of Green Procurement

In November 2000, Casio Computer published a "Standards Manual for Green Procurement" to enable the company to put Green Procurement into practice by prioritizing the purchasing of materials with low environmental impact. (>P20)



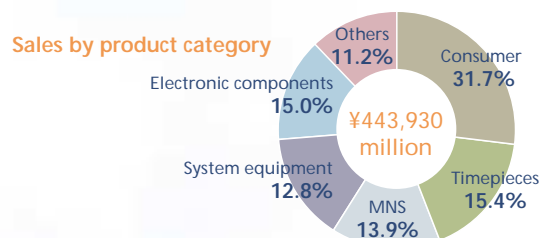
3 Introduction of Environmental Accounting

Since fiscal 1999, The Casio Group has used its own set of definitions to assess costs associated with environmental conservation. Calculations of environmental conservation investments and costs for fiscal 2000 followed the "Guidelines for Developing an Environmental Accounting System (Year 2000 Report)" issued by the Ministry of the Environment (MOE). (>P23)

Editorial policies

- Environmental Report 2001 is based on MOE's "Environmental Reporting Guidelines (Fiscal Year 2000 Version)."
- This report provides information on the Casio Group's business activities as well as environmental aspects of these activities, outlines the group's environmental charter, policies, organization, and action plans that make up its environmental management system for reducing the environmental impact of the entire group, and reports on individual activities undertaken by the Group.
- Our contacts and website URL are given at the end of the report to encourage communication with our readers. There is also a separate questionnaire available.

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: ¥443,930 million (consolidated)



Main lines of business

- Consumer:** Electronic calculators, electronic dictionaries, label printers, visual-related products, digital cameras, electronic musical instruments, audio equipment
- Timepieces:** Digital watches, analog watches, clocks
- Mobile Network Solutions:** Mobile PCs, cellular phones, pocket computers, handheld terminals
- System equipment:** Electronic cash registers (including POS), office computers, page printers
- Electronic components:** LCDs, Bump processing consignments, TCP assembly and processing consignments
- Others:** Factory automation, molds, toys

No. of employees: 3,407 (non-consolidated), 18,119 (consolidated)

Consolidated Companies: 66 subsidiaries (domestic and overseas)
 10 equity-method companies (domestic and overseas)

About this Report

Period and Scope

- The Environmental Report 2001 is a compilation of the Casio Group's major environmental conservation efforts during fiscal 2000 (April 1, 2000 to March 31, 2001).
- Data has been collected from all the Casio Group's domestic facilities, apart from those involved with sales, service, or information processing, which account for most of the group's overall environmental impact in Japan.
- Changes from fiscal 1999 that arise from group reorganization include the addition of Kofu Casio, Yamagata Casio, Casio Media Systems, and CCP. Casio Micronics has also established a new office in Yamanashi.
- Starting in fiscal 2000, environmental impact data has been gathered separately for electronic component manufacturing facilities and assembly/processing manufacturing facilities. The Hachioji Laboratory is regarded as an electronic component manufacturing facility while the Head Office, Hamura Research & Development Center, and Tokyo Product Control and Technical Center are included on the list of assembly and processing manufacturing facilities.

The Data

•Energy Consumption

Data is compiled in accordance with the survey methods set out in the electronics and electric industry's the Voluntary Plan for Energy Consumption. Carbon dioxide (CO₂) equivalents are calculated using the coefficients listed in the plan.

•Industrial Waste

Data regarding industrial waste is compiled in accordance with the definitions of the electronics and electric industry for industrial emissions and recycling.

•Air and Water Quality

Compliance data for the Air and Water Pollution Control Laws is used.

•Pollutant Release and Transfer Register (PRTR)

Data is compiled in accordance with PRTR Guidelines (revised in March 2001) for the electronic and electric industry.

Scope	Casio Group Facility		Principal Business	No. of Facilities	
Scope of Environmental Action Plan Target *1 Scope of Complied and Published Environmental Impact Data	Domestic	Casio Computer Co., Ltd.	Head Office *2	Headquarter functions	1
			Tokyo Product Control and Technical Center	Development, design, and materials procurement of systems equipment	1
			Hamura Research & Development Center	Development, design, and materials procurement for electronic equipment such as calculators and timepieces	1
			Hachioji Laboratory	Research in and development of LCDs devices	1
	Electronic Component Facilities	Kofu Casio Co., Ltd. *3	Kochi Casio Co., Ltd.	Manufacture of electronic calculators, mobile information devices, systems equipment, LCD devices, plastic parts, and molds	2
			Casio Micronics Co., Ltd. *3	Development and manufacture of LCD devices	1
			Casio Casio Co., Ltd. *3	Development, manufacture, and sales of electronic components	2
	Assembly and Processing Facilities	Yamagata Casio Co., Ltd. *3	Aichi Casio Co., Ltd.	Manufacture of electronic timepieces and communications equipment	2
			Casio Electronic Manufacturing Co., Ltd. *2	Manufacture of digital cameras, electronic musical instruments, and communications equipment	1
			Casio Refre Co., Ltd. *2	Manufacture of page printers	1
			Casio Techno Co., Ltd. *2	Refurbishing and marketing of electronic calculators and other electronic equipment	5
			CCP Co., Ltd. *4	Repair, marketing, and maintenance of systems equipment and other electronic equipment	1
	Other (sales, service, information processing, etc.)	Casio Media System Co., Ltd. *4	CCP Co., Ltd. *4	Manufacture and marketing of home audio equipment	3
			CCP Co., Ltd. *4	Manufacture and marketing of toys and daily items	
Overseas	Group companies				

*1: Energy conservation, industrial waste reduction, and green procurement goals exclude overseas facilities.
 *2: Facilities added in fiscal 1998 *3: New offices added in fiscal 2000 *4: Facilities added in fiscal 2000



Contributing to society and the environment by providing unique products

We are now at the dawn of the 21st century, the century of environmental conservation and improvement. Japan has taken a number of important steps towards creating a recycling-oriented society, and towards achieving the goals set out in the Kyoto Protocol at the 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3). We cannot overemphasize the importance of positioning environmental protection as a major responsibility of every enterprise.

Since its foundation, Casio Computer Co., Ltd., has produced a wide range of products, consistently acting on our commitment to "Contribute to society by providing unique products." In the Mobile Internet generation in the 21st century, we will expand our MNS (mobile network solution) business and electronic component business through the development of cellular phones, portable information terminals and other types of mobile equipment. We are focusing our efforts on creating mobile products that have compact, lightweight, and power-saving designs. This is in line with our on-going initiative to reduce our environmental impact in general in terms of product life cycle, and of input and output during the production of electronic components. We believe these initiatives will help to reduce the overall environmental impact of the Casio Group.

We are also determined to organize a system for collecting and recycling personal computers and storage batteries in line with the Law for the Promotion of Utilization of Recycled Resources that came into force in April 2001. In this way, we hope to contribute to the realization of a recycling-oriented society.

Our Environment Report 2001 is designed to give you an overview of the environmental protection activities of the Casio Group and our results in fiscal 2000. We hope to update the report annually. We also invite you to access the Internet to keep track of our environmental conservation programs. Your candid opinions and comments are always welcome. We hope for your support in our past and future efforts to protect the environment.

August 2001

梶尾和雄
Kazuo Kashio
President

Results of Fiscal 2000 Programs and Future Efforts

Fiscal year 2000 saw the coming into force of the Basic Law for the Promotion of Formation of a Recycling-Oriented Society and other new laws that address recycling. These laws are meant to help the nation to better prepare for the shift from the present mass production, consumption and disposal-based economy to one that supports the reuse and recycling of resources.

Environmental conservation is an important management theme for the Casio Group. During the year, we managed to make combined efforts toward the realization of the "Clean & Green 21 Initiative" at our plants and facilities, and are pleased to report numerous successes.

Programs and Results

The Casio Group's efforts to reduce the environmental impact of our products has led to the acquisition of the Eco Mark and "environmental labels" accredited by International Energy Star Program and other third parties. Use of recycled materials and improvement of packaging materials has been encouraged while the collection and recycling of consumable printer materials (drums and toner sets) has been put into practice.

Energy efficiency enhancement and energy conservation activities at our production sites have led to a 3.4% reduction over fiscal 1999 figures for the CO₂ emissions per unit manufactured. Our resources-recycling efforts have also led to a parallel 11.1% reduction in the final landfill disposal of industrial waste.

As part of the Casio Group's Green procurement activities, we have published a manual entitled "Standards Manual for Green Procurement" to encourage our suppliers to promote Green procurement that addresses prioritized purchasing of materials with less environmental impact. We have been granted ISO 14001 certification at four domestic facilities and four group companies overseas in the year. We are disclosing our environmental accounting for the first time in this report. There is room for improvement in terms of their scope and accuracy, but a better understanding of environmental conservation costs will give us clues as to how our management resources should be optimally allocated to support these programs. We hope to use the Manual in our decision-making procedures in the future.

Future Efforts

Major programs in fiscal 2001 include the development of internal guidelines for designating environmentally conscious products as "Green products," promoting the development of such products, and expanding the use of products containing lead-free solder.

The Law for the Promotion of Utilization of Recycled Resources, which came into force in April 2001, urges the construction of a collection system for used personal computers. We will build this type of system for recovering and recycling end-of-life computers.

Major goals also include the total elimination of substitute CFCs in our facilities and the acquisition of the ISO 14001 certification at all our production bases overseas.

Our mid-term efforts include the ongoing upgrading of the "Clean & Green 21 Initiative", consolidation of behavioral targets with products and facilities, and full-scale efforts to reduce the Casio Group's total environmental impact.

August 2001



桧尾幸雄

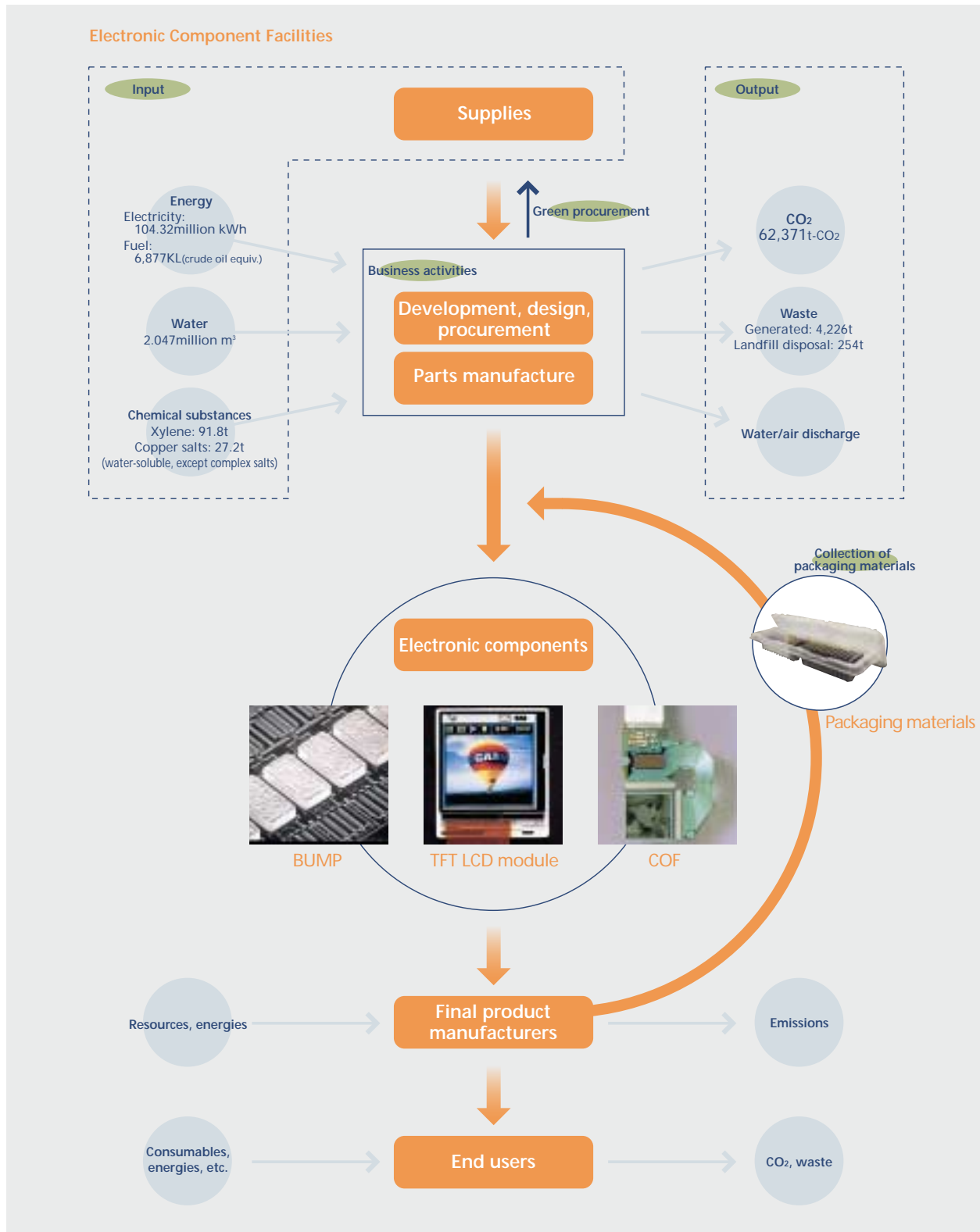
Yukio Kashio

Executive Vice President

Chairman of Casio Environmental Conservation Committee

Casio Group's businesses can be broadly categorized into electronic component facilities that produce LCDs, BUMP, COF and assembly/processing manufacturing facilities that produce electronic equipment. The Casio Group is directly responsible for controlling the input and output of substances having high environmental impacts related to facilities involved with development, design, procurement, and manufacturing. Our environmentally conscious development and design activities and green procurement activities are indirectly contributing to the reduction of their use and disposal of substances with high environmental impact and of their environmental impact during procurement from our suppliers.

Electronic component facilities generally have a greater environmental impact owing to their more intensive energy and water usage as well as industrial waste and carbon dioxide (CO₂) generation.



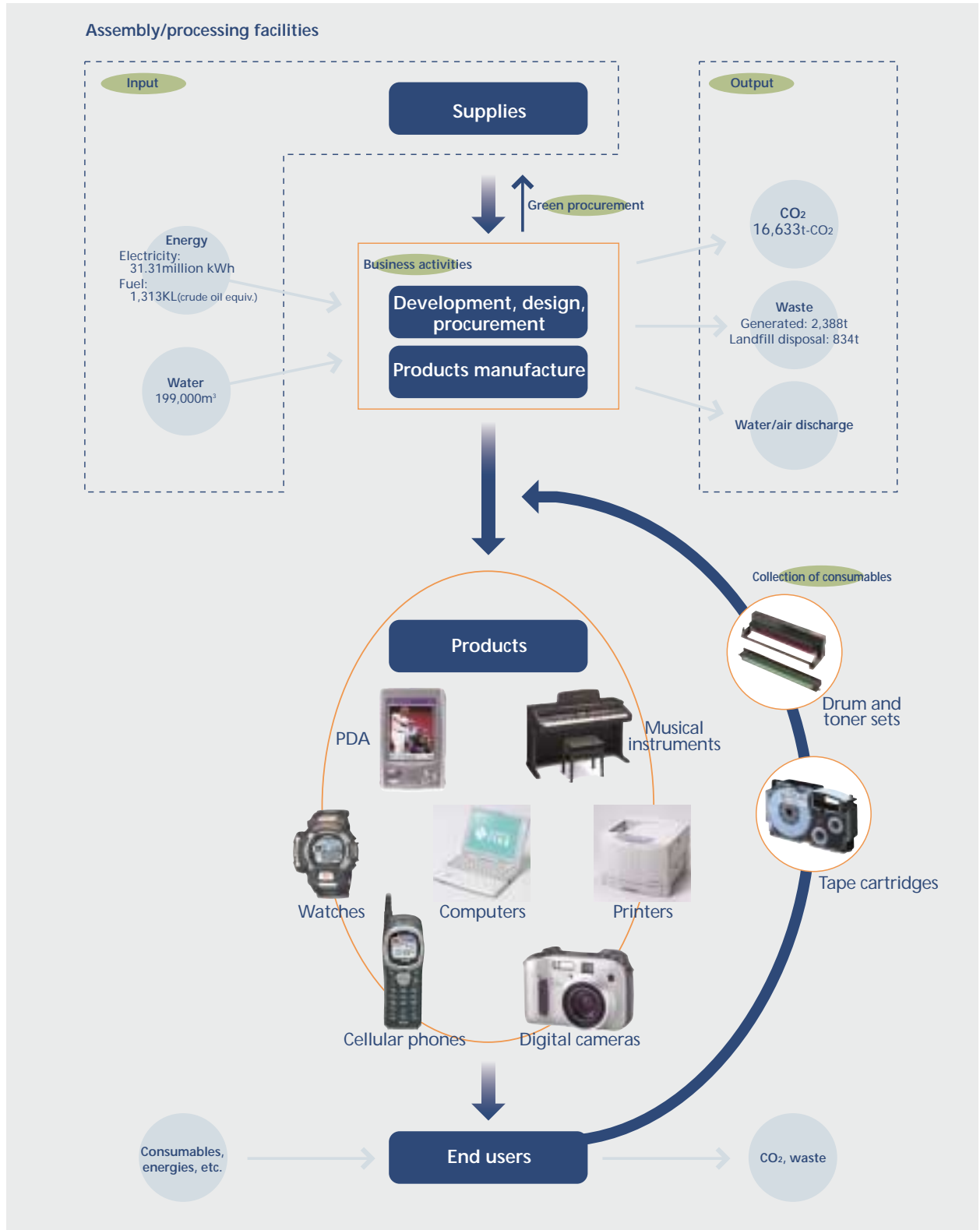
Glossary

Environmental aspects

Elements of an organization's activities, products or services that can interact with the environment (ISO 14000 definition)

BUMP

A technology for forming small projections (pins) on LSIs for joining LSI chips with COG (chip-on-glass) or TCP (tape carrier package).



Glossary

TFT LCD

A type of liquid crystal display in which each dot of the screen consists of a TFT (thin film transistor). Characterized by high contrasts, wide viewing angles, and faster response time.

COF

Chip-on-film. A method of directly joining an LSI chip to a thin resin film to achieve high-density packaging of LSI circuits.

Casio Environmental Charter and Fundamental Environmental Policies

In January 1993, the Casio Group established the Casio Environmental Charter, which states four policies and addresses the implementation of voluntary and sustained efforts toward preservation of the environment.

Casio Environmental Charter

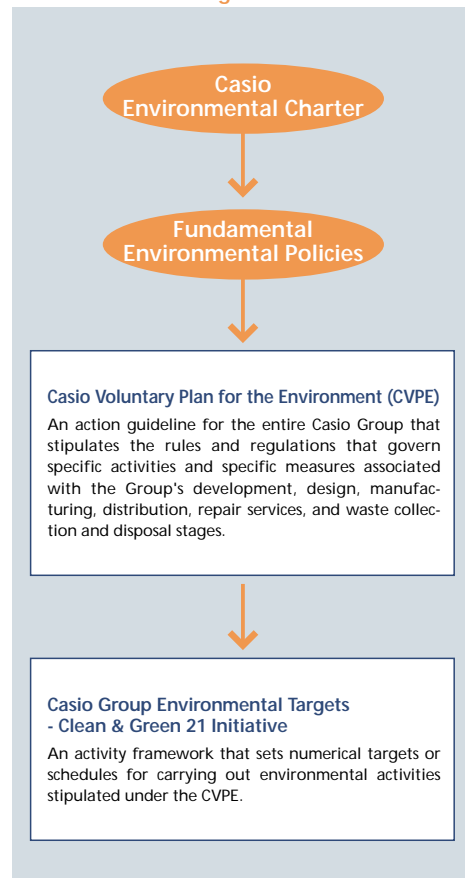
Casio recognizes the importance of responsible corporate measures in every Group business field to preserve the global environment. From a broad international perspective, Casio shall endeavor to implement basic policies and concrete measures to contribute global prosperity and welfare.

Fundamental Environmental Policies

1. Follow domestic and overseas environmental laws, regulations and standards.
2. Voluntary Casio Environmental Conservation Rules^{*1} shall be established to consider environmental interests at each stage of product development – design, manufacturing, distribution, repair, recovery and disposal. All business divisions of the Casio Group shall aim for constant improvement through compliance audits while taking responsibility for their actions.
3. As responsible corporate citizens, all member of the Casio Group shall recognize the importance of and aim for high awareness in preserving the global environment.
4. These measures shall be applied to all business divisions of the Casio Group in Japan and overseas.

*1: Casio Environmental Conservation Rules are concrete action programs for environmental conservation determined in the Casio Voluntary Plan for the Environment (CVPE).

From the Casio Environmental Charter to Environmental Targets



Casio Group Environmental Action Plan

In January 1993, the Casio Group established the Casio Voluntary Plan for the Environment (CVPE) to implement Casio's four fundamental environmental policies and promote environmental conservation activities for the entire Group. CVPE has subsequently been revised in response to changing demands and development of its programs and is in its sixth edition as of November 2000.

CVPE serves as a set of action guidelines for the entire Casio Group. It stipulates the rules and regulations that govern specific activities and measures associated with the Group's development, design, manufacturing, distribution, and repair services, as well as waste collection and disposal stages. CVPE also outlines the Casio Group's Environmental Conservation Rules, which serve as specific action programs for the Group's environmental conservation programs.

The Environmental Conservation Rules in turn form the basis of the Casio Group's Clean & Green 21 Initiative, which was authorized by the Group in June 1999. The Initiative sets numerical targets and schedules for carrying out energy conservation, waste reduction, and other environmental activities. The Clean & Green 21 Initiative offers a clear outline of the entire Casio Group's medium-term action plan in order to help the Group achieve its environmental targets.

In June 2001, product stewardship programs under the Clean & Green 21 Initiative were reorganized under two broad targets, while two targets were added and two targets were revised for plant and facility environmental programs. Product stewardship programs now target the development of environmentally conscious products and the abolition of use of hazardous chemical substances. The two additional targets and two revised targets under plant and facility environmental programs address waste reduction, abolition of hazardous chemical substances, and Green procurement.

The Casio Group's "Clean & Green 21" Environmental Action Plan

Product Stewardship Programs

Topic	Specific targets and measures		Results in fiscal 2000	Reference
	Updated targets ^{*1}	Former targets		
Develop environmentally conscious products	30% green product sales in fiscal 2003		* New targets set in fiscal 2001	P13
	Promote energy conservation <ul style="list-style-type: none"> • Develop energy-efficient products • Register for the International Energy Star Program 		Twenty new models developed (solar-powered calculators, energy-efficient computers, etc.), 18 of which are registered under The International Energy Star Program.	P10
	Promote resource conservation and recycling <ul style="list-style-type: none"> • Increase the use of recycled resources • Adopt recyclable materials • Adopt easy-to-disassemble designs 		100% use of recycled materials for the housing of 2 calculator and 2 musical instrument models.	P11
	Improve packaging materials <ul style="list-style-type: none"> • Increase recyclability • Increase the use of recycled resources • Promote resource conservation 		Volume reduction of packaging materials and increased use of paper.	P12
Discontinue the use of hazardous substances	Extend the use of lead-free solder from fiscal 2001		Lead-free solder in 1 calculator model.	P13
	Discontinue leaded solder by fiscal 2004			

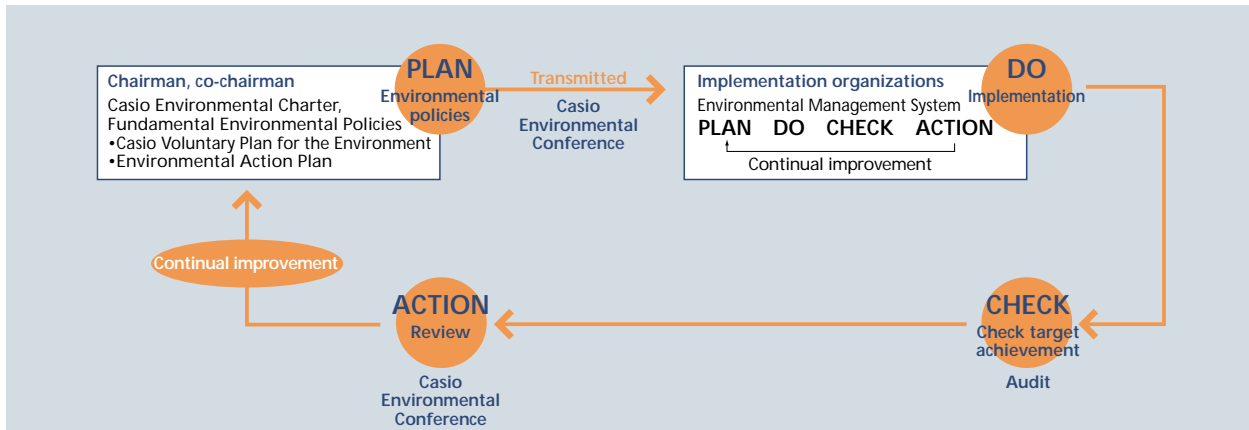
Plant and Facility Environmental Programs

Topic	Specific targets and measures		Results in fiscal 2000	Reference
	Updated targets ^{*1}	Former targets		
Prevent global warming by energy conservation	By fiscal 2010, reduce CO ₂ emissions per unit manufactured to 25% lower than in fiscal 1990.		CO ₂ emissions per unit manufactured in fiscal 2000 were +1.2% compared to those in fiscal 1990.	P14
Reduce wastes	Zero emissions by fiscal 2005		Final disposal in fiscal 2000 was 1,087t. * Target revised in fiscal 2001.	P16
	By fiscal 2005, reduce waste per unit manufactured to 30% below that in fiscal 2000.		* New target set in fiscal 2001.	
Discontinue the use of hazardous substances	Discontinue the use of substitute CFCs in all domestic and overseas facilities by the end of 2001.		Technical assessment completed for new cleaning methods without using substitute CFCs (HCFC-141b).	P18
	-	Discontinue the use of chlorine-containing solvents at domestic and overseas production bases by the end of 2000	Use discontinued at all domestic and overseas production bases by the end of fiscal 1999.	
	Detoxify PCB-containing equipment in storage by fiscal 2005.		* New target set in fiscal 2001.	P19
Acquire ISO14001 certification	Acquire certification at all Casio Group production facilities overseas by the end of fiscal 2001.		Acquired at 4 Casio Computer facilities and 4 group companies overseas	P9
Implement green procurement	Green procurement level of 80% with domestic suppliers by fiscal 2003		"Standards Manual for Green Procurement" published in November 2000 and introduced to suppliers.	P20

Note: *1: Revised on June 11, 2001

The Casio Group Environmental Management System

An environmental management system ensures continuous improvement by means of the PDCA (Plan, Do, Check, Act) cycle. In the Casio Group, the "P" (Plan) part is effected by implementing by the Casio Voluntary Plan for the Environment (CVPE) and the Environmental Action Plan. The implementation function of environmental management system makes sure the plans are put to work (Do), followed by Check and Act, in a iterative PDCA cycle that drives our corporate efforts to reduce environmental impact.



Organization of the Environmental Conservation Committee

In 1991, the Casio Group set up the Casio Conservation Committee, chaired by Executive Vice President Yukio Kashio. Its purpose was to clarify the direction taken by the Group towards conservation of the environment. During fiscal 2000, Managing Director Shimizu joined the Board of Directors as co-chairman of the Casio Conservation Committee and was placed in charge of environmental affairs. His chief role is to further reinforce our environmental conservation efforts and reduce our impact on the environment.



Auditing System

Audits (both internal and external) are conducted to make certain that the Casio Group environmental management system is being operated correctly and continually imposed. In the internal audits, our environmental audit organization, The Quality and Environment Center, confirms the results of product assessment after the improvement of environmental performance of products, and reviews the results of energy conservation and waste reduction as well as mid-term plans at respective facilities. The implementation level of the environmental targets of the entire group is thus checked twice each year. Facilities already certified under ISO14001 are subjected to an annual internal audit by their own auditors and to external audit by the inspectors of the certifying organs to ensure that the environmental management system is functioning properly and effectively in accordance with ISO14001 standards.

Glossary

Continual improvement

Process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy (ISO14000 definition)

Environmental performance

Measurable results of the environmental management system, related to an organization's control of its environmental aspects, based on its own environmental policy, objectives and targets (ISO14000 definition)

Environmental Education and Seminars

As part of the enlightenment activity directed at all Casio Group employees, Casio Computer's Quality and Environment Center has created its own website. Information about environmental regulations, ISO14001 standards, the Casio Voluntary Plan for the Environment, and industrial environmental trends is provided from the website on the Casio Intranet. In addition, our in-house magazine (monthly publication) also offers stories on environmental activities to enhance relevant knowledge and share information among the employees.

Once ISO14001 certification is acquired, seminars are provided at the certified facility through general and technical courses designed separately for the management, environmental managers, etc.

Our special activity during fiscal 2000 included a study tour of a recycling center for home appliances. Forty-three employees (design engineers) attended the tour.



Study tour of a recycling center for home appliances

ISO14001 Certification

The Casio Group considers ISO14001 certification to be an effective tool in standardizing its internal environmental management system while improving its corporate structure and has been working to acquire certification for all its sites. During fiscal 2000, certification was granted at four domestic sites: Casio Computer's Tokyo Product Control and Technical Center, The Hachioji Laboratory, Hamura Research & Development Center, and the Head Office. Certification was also granted at four group companies overseas including Casio (Malaysia) Sdn. Bhd., Asahi Industries (Malaysia) Sdn Bhd., Casio Electronics (Zhuhai), and Pt. Asahi Electronics Indonesia.

Our plans for fiscal 2001 include acquiring certification for three domestic and five overseas sites. All of our overseas production sites will be certified under the program.

Certified Casio Group Bases (as of end of fiscal 2000)

	Site	Date	Certification body
Domestic	Aichi Casio Co., Ltd.	January 1997	Japan Quality Assurance Organization (JQA)
	Yamagata Casio Co., Ltd. *1	November 1997	Japan Quality Assurance Organization (JQA)
	Kofu Casio Co., Ltd. *2	January 1998	Tüv Product Service Japan
	Kochi Casio Co., Ltd.	March 1998	Japan Audit and Certification Organization (JACO)
	Casio Electronic Manufacturing Co., Ltd.	September 1999	Japan Quality Assurance Organization (JQA)
	Casio Refre Co., Ltd.	January 2000	Japan Quality Assurance Organization (JQA)
	Casio Micronics Co., Ltd.	March 2000	Japan Quality Assurance Organization (JQA)
	Casio Computer Co., Ltd., Tokyo Product Control and Technical Center	June 2000	Japan Quality Assurance Organization (JQA)
	Casio Computer Co., Ltd., Hachioji Laboratory	October 2000	Japan Quality Assurance Organization (JQA)
	Casio Computer Co., Ltd., Hamura Research & Development Center	October 2000	Japan Quality Assurance Organization (JQA)
	Casio Computer Co., Ltd., Head Office	December 2000	Japan Quality Assurance Organization (JQA)
Overseas	Casio Korea Co., Ltd.	April 1998	Korean Standards Association Quality Assurance
	Casio Electromex S.A. de C.V.	December 1998	Underwriters Laboratories Inc.
	Casio Computer (Hong Kong) Panyu Factory	September 1999	Shenzhen Environmental Management System Certification Center
	Casio Computer (Hong Kong) Ltd.	December 1999	Det Norske Veritas
	Casio (Malaysia) Sdn. Bhd.	May 2000	Standard and Industrial Research Institute of Malaysia
	Asahi Industries (Malaysia) Sdn Bhd.	August 2000	Standard and Industrial Research Institute of Malaysia
	Casio Electronics (Zhuhai),	September 2000	Det Norske Veritas
	Pt. Asahi Electronics Indonesia	February 2001	Bureau Veritas Quality International

*1: Murayama Factory certified during 2000 renewal.

*2: Ichinomiya Office certified during 2001 renewal.

Planned Certification during Fiscal 2001

Domestic	Overseas
Casio Techno Co., Ltd.	Asahi Electronics (Thailand) Co., Ltd.
Casio Media System Co., Ltd.	Casio Electronics (Guangzhou) Co., Ltd.
CCP Co., Ltd.	Casio Electronics (Shenzhen) Co., Ltd.
	Casio Electronics (Zhongshan) Co., Ltd.
	Casio (Taiwan) Ltd.

Glossary

ISO14001

An international standard containing requirements for a company or an organization to set its own environmental policy and to construct a mechanism (environmental management system) for implementing, on a continual basis, a series of programs including *planning, implementation and operation, checking and corrective action, and management review.*

Certification body

An organization that examines whether an environmental management system conforms to the ISO14001 standard. Sites approved by the certifying institution can then publicly announce their acquisition of ISO14001 certification.

Aiming to Create Environmental Conscious Products

The Casio Group assesses its new products on the basis of the CVPE. We use Product Environmental Assessment Sheets with 12 assessment areas and 32 evaluation items as tools for carrying out preliminary checks from the design stage to determine the product's environmental impact. With regard to compactness and thinness of products and packaging and lower power consumption, we aim to improve our products by comparing them with similar products made by our competitors.

•Mechanism of product assessment

New products developed with new, sophisticated design techniques are assessed by the development and design divisions. The results are inspected by the environmental auditing organization.

Product assessment in fiscal 2000

Category	No. of products
Assembled/processed products	60
Device components	61
Total	121

Product assessment items

Product assessment items	Purpose			
	Resource conservation	Recycling	Safety	Energy conservation
✓ Use of recycled materials				
✓ Labeling of resins employed				
✓ Parts made of easily detached and sorted single materials				
✓ Improved ease of disassembly				
✓ Non-use or reduced use of hazardous chemical substances				
✓ Compact, thin designs				
✓ Development of energy-efficient products				
✓ Compact, thin packaging				
✓ Sortable packaging materials; greater use of paper; safety				
✓ Use of recycled materials for packaging				
✓ Non-use of substitute CFCs or chlorine-based solvents in component cleaning process				
✓ Toxic properties of batteries; ease of removal; indication of method of collection and recycling of storage batteries				

Note: Assessment items for assembled/processed products (separate items apply to electronic devices)

For further improvement, these points are evaluated by comparing similar products on the market.



Product environmental audit sheets



Energy conservation

•Development of energy-efficient products

The Casio Group has introduced to the market highly functional products with low power consumption using proprietary LSI circuit design technology. Casio calculators and timepieces, for instance, incorporate power-saving circuit designs that realize longer battery life or better solar battery output, thus contributing to reduced use of batteries. We are also making steady efforts to develop highly energy-efficient office equipment that will meet the energy conservation criteria under the International Energy Star Program.



Solar-powered calculators for school use (AZ-24S)



SPEEDIA N5 page printer



International Energy Star Program Logo

Energy-efficient products developed in fiscal 2000

Category	Qty ^{*1}	Feature	Environmental label
Calculator	2(14)	Clean energy (solar)	Eco-mark
Computer	7(35)	Low-power mode	International Energy Star Program
Display	6 (9)	Low-power mode	International Energy Star Program
Printer	5(29)	Low-power mode	International Energy Star Program

*1: Figures in parentheses indicate the total number of registrations as of March 31, 2001.

Glossary

Eco-mark

An environmental label system initiated by the Japan Environment Association in 1989 after receiving guidance and advice from the Environment Agency (Ministry of the Environment). Eco-marks are placed on products that have low impact on the environment, thus encouraging conservation of the environment.

International Energy Star Program

Agreed between the Japanese and the US governments in October 1995, the International Energy Star logo is placed on office equipment (computers, displays, printers, facsimiles, copiers) that meets energy conservation criteria.

Resource Conservation and Recycling

•Increased use of recycled resources

The Casio Group's efforts to reduce the use of raw materials are implemented in two ways: promotion of compact and thin product designs by means of high-density circuit technology, and use of 100% recycled plastics in the products' outer shells.

Efforts in fiscal 2000

A 100% recycled plastic case design was realized during fiscal 2000 for two calculator and two musical instrument models. This design is now used in 12 other calculators and 6 other musical instruments (made by Casio Electromex) in total.

100% recycled plastic body models

Category	Product name				
Calculator	AZ-24S ^{*1}	JS-10eco	JS-8keco	DS-10eco	DS-8keco
	JZ-20E ^{*1}	JS-12eco	JS-10keco	DS-12eco	DS-10keco
		JS-20eco	JS-20keco	DS-20eco	DS-20keco
Musical instrument	CTK-571 ^{*1}	CTK-533	CTK-541	CTK-558	
	CTK-573 ^{*1}	CTK-631	CTK-551	CTK-651	



Musical instrument using a 100% recycled plastic case(CTK-571)

*1: New in fiscal 2000

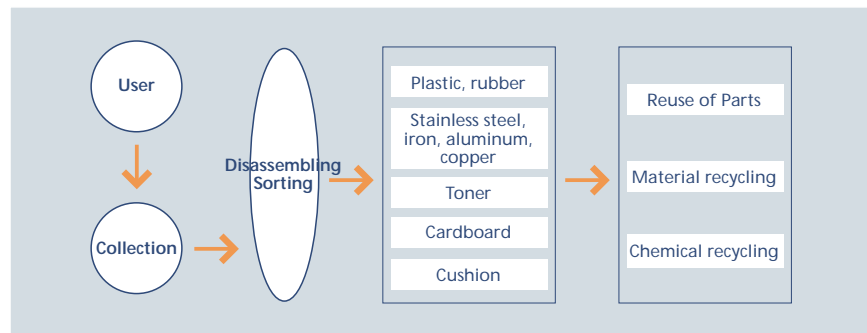
•Recovery and recycling of used consumable materials

Drum and toner sets (printer consumables) and tape cartridges (from label printers) are collected and recycled.

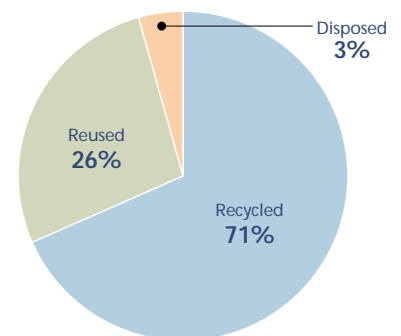
Efforts in fiscal 2000

Full-scale collection and recycling of the drum and toner sets from Casio Electronic Manufacturing's printers started in June 2000. The collection rate during the first year was 47%. The collected consumables are disassembled, sorted and selectively reused. Those parts that are readily reusable are recycled for new use.

Reuse and recycling mechanism



Ratios of reuse, recycling and waste



Drum and toner set



Disassembled drum set



Disassembled toner set

Glossary

Reuse

Reusing used parts without altering their original shape. "Reuse" falls between the other two "Rs" of environmental impact reduction efforts, namely "Reduce" (avoid generation of waste) and "Recycle".

Recycling

Reusing wastes by making or incorporating them into a new material (material recycling) or as a source of heat (thermal recycling).

Improvement of packaging materials

In an initiative led by the Casio Packaging Committee, the Casio Group has developed a program of environmental conservation measures aimed at reducing the use of packaging materials, promoting the use of recycled materials or materials free from styrofoam, and the use of more compact packaging materials.

•Reducing use of packaging materials

Initiatives under this theme include increasing the shock resistance of products to allow the use of thinner cushioning materials, and reducing the box size by more efficient use of dead space in packaging. The size and weight of items in the same container are also being reviewed to achieve more compact packaging.

•Substituting paper for resinous materials

We are promoting the use of paper cushions, pulp molds, and multilayered cardboard boxes where product characteristics or shock resistance allow it, in place of conventional styrofoam packaging.

•Using recycled resources

We are using pulp molds made of 100% recycled paper in an increasing number of products. Watches are now packed in decorative boxes made entirely of 100% recycled books.

•Using non-wood materials

We are using bagasse, the dry pulp left over after extracting the juice from sugar cane, in increasing amounts. During fiscal 2000, it was used in 12 calculator models. We are also working on the feasibility of using reeds, bamboo, and other non-wood materials.

•Future Efforts

We will apply the new packaging to more products while searching for a truly ideal style of packaging.

Efforts regarding returnable packaging materials (inner and external boxes for transportation)

We plan to switch from cardboard to plastic boxes to allow use of the same boxes again and again. This will minimize the wasteful single use of cardboard boxes and thus reduce our environmental impact.

Efforts regarding LCA (criteria for judging the environmental impact of packaging materials)

We plan to gather and analyze LCA data to enable us to build a database accessible by the packaging industry. Packaging material suppliers will be able to easily evaluate environmental impact when selecting materials for our products.

Environmental efforts with packaging materials

Theme	Description
Sortable materials Paper, safety	Substitute paper for resinous materials
	Use of single material
	Use of non-wood materials
Recycled resources	Use of recycled paper and resins
Compact materials	Reduce box size and volume of materials
Returnable materials	Repeated use (towards zero waste)
Studies on LCA	Clarify criteria for evaluating the environmental impact of materials



About 50% reduction in box volume (PDA)



Cardboard cushions (MPC)

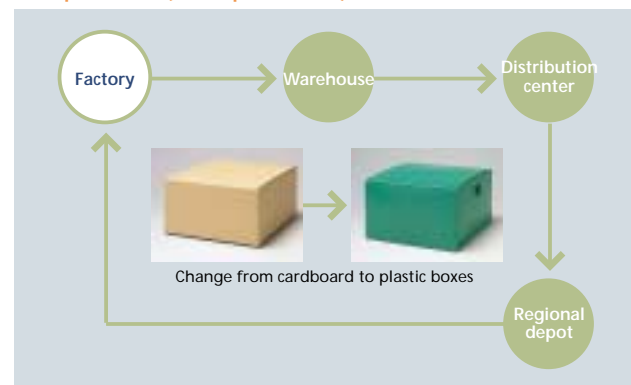


Pulp molds (PDA)



100% recycled from books (watches)

Returnable inner and external boxes for transportation (Conceptual chart)



Glossary

Pulp molds

Molds made from pulp are drawing interest in the industry as a recyclable material that will replace conventional packaging and cushioning materials that use styrofoam or PVC.

Bagasse

Non-wood paper, made mostly from sugar cane residue, is also drawing attention in the industry. Its high density and good hardness make it usable for quality printing paper, publishing, etc.

Reduction of the use of hazardous substances

Targets

- Increase the number of products using lead-free solder in fiscal 2001
- Discontinue the use of leaded solder by fiscal 2004 (new target set in fiscal 2001)

•Increasing the use of lead-free solder

Lead-free solders must be used in all our products to reduce the use of substances that are hazardous to human health or that have a negative environmental impact. Efforts are being made to identify lead-free solders, which represent a major step in this direction, by evaluating their reliability in terms of the heat resistance of parts and products, solder integrity, etc.

Efforts made in fiscal 2000

Lead-free solder was adopted in one calculator model during fiscal 2000. The total number of calculators in which lead-free solder is used is now 7.



Calculator with USB cable in which lead-free solder is used (JZ-20E)

Products in which lead-free solder is used

Category	Product name			
Calculator	JZ-20E *1	JS-8keco	JS-20keco	DS-10keco
		JS-10keco	DS-8keco	DS-20keco

*1: New in fiscal 2000

Future efforts to create environmentally conscious products

Targets

- Raise the ratio of Green products to 30% of annual sales in fiscal 2003 (new target set in fiscal 2001)

The "Casio Guidelines for Green Product Development" were introduced in May 2001 to clarify our criteria for environmentally conscious products and promote their development. The new guidelines will be used from the very early stages of new product planning.

Outline of the "Casio Guidelines for Green Product Development"

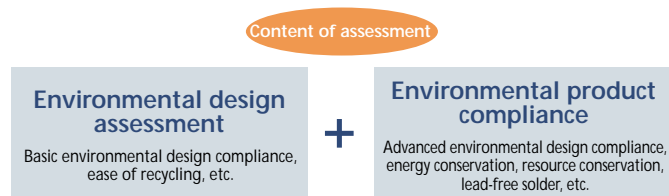
Process of product assessment

Assessment begins at the new product planning stage and continues through all major stages from design to the final decision to start mass production.



Content of product assessment

Products are assessed in terms of environmental design (ease of recycling and other basic design features) and environmental compliance (energy conservation, resource conservation, lead-free solder, and other advanced features over conventional and competitive products).



Glossary

Lead-free solder

Conventional solders are made of tin and lead alloys. After disposal, the lead in the printed circuits may contaminate the environment. Lead-free solders are made of tin and silver or copper and do not contain lead, a toxic heavy metal.

Outline of key operations

The Casio Group's business activities are roughly divided into those related to the manufacture of LCDs, BUMP and COF and those related to the assembly/processing of a range of electronic equipment.

Electronic component facilities tend to use the most energy and water and generate more industrial waste and carbon dioxide (CO₂), thereby imposing a greater environmental impact.

Prevention of Global Warming by Energy Conservation

Target

By fiscal 2010, to reduce CO₂ emissions per unit manufactured to 25% lower than in fiscal 1990.

Summary of Fiscal 2000 Results

Our CO₂ emissions in fiscal 2000 in the facilities covered in this report were 79,005 t-CO₂, up 24.3% from fiscal 1999. This increase was due to the addition of two electronic component facilities (Kofu Casio, Casio Micronics) and an assembly/processing facility (Yamagata Casio) plus two companies (Casio Media Systems and CCP).

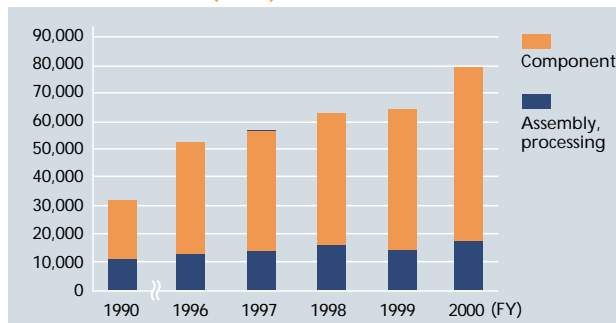
On a monetary basis, the CO₂ emissions per unit manufactured were 0.423 t-CO₂ per million yen, down 3.4% from fiscal 1999, or up 0.5% from fiscal 1990.

Trends in CO₂ emissions

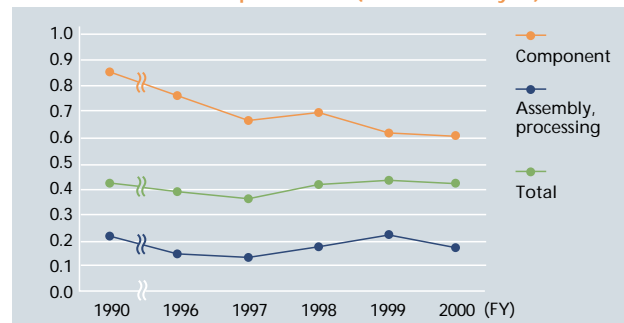
	FY	1990	1996	1997	1998	1999	2000
Total CO ₂ emissions (tonnes of CO ₂ [t-CO ₂])	Component	20,144	40,798	44,749	47,398	48,955	62,371
	Assembly	10,246	11,633	11,955	15,275	14,619	16,633
	Total*	30,389	52,430	56,704	62,673	63,574	79,005
CO ₂ emissions per unit manufactured (t-CO ₂ /million yen)	Component	0.868	0.764	0.670	0.696	0.614	0.609
	Assembly	0.207	0.147	0.133	0.184	0.224	0.198
	Total	0.418	0.395	0.362	0.415	0.438	0.423

* Figures are rounded up.

Total CO₂ emissions (t-CO₂)



CO₂ emission factor in production (t-CO₂/million yen)



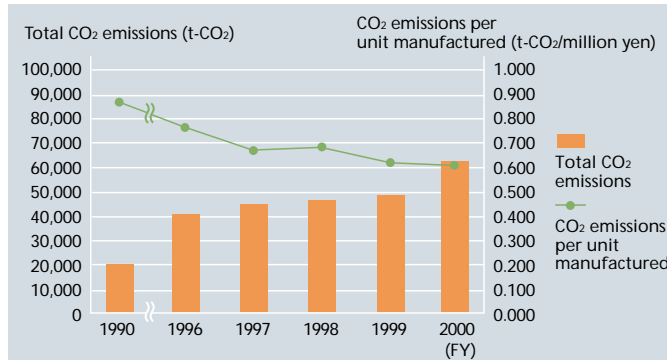
•Electronic Component Facilities

Activities in Fiscal 2000

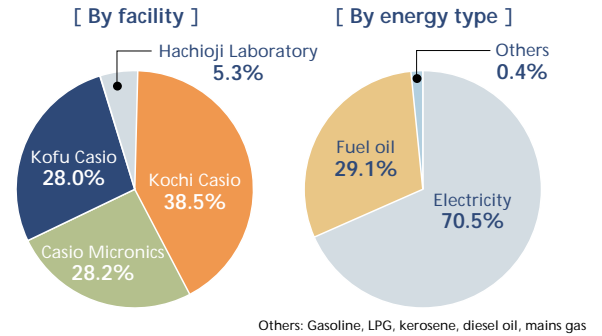
Total CO₂ emissions during fiscal 2000 from our electronic component facilities increased to 62,371 t-CO₂, up 27.4% from fiscal 1999. This increase was due to a 28.5% increase in production and the addition of the figures for another facility (under Casio Micronics) to the report. However, CO₂ emissions per unit manufactured were 0.609 t-CO₂ per million yen, down 0.8% from fiscal 1999, thanks to increased energy efficiency at the manufacturing facilities and the acquisition of ISO 14001 certification at Casio Computer's Hachioji Laboratory, which encouraged further energy conservation efforts. The CO₂ emissions of 62,371 t-CO₂ represent 78.9% of all plants and facilities covered in this report.

Among our plants and facilities, CO₂ emissions were the highest at Kochi Casio, representing 38.5% of emissions at all electronic component facilities. In terms of energy type, electricity accounted for 70.5% of all energy consumption.

Total CO₂ emissions and CO₂ emissions per unit manufactured at electronic component facilities



CO₂ emissions in fiscal 2000



Future Efforts

Continued efforts will be made at the electronic component facilities to reduce energy consumption through increased capacity of production equipment, improved yield and operating methods of auxiliary facilities and adequate management of air conditioning, plus the turning off of all unnecessary lighting.

Other planned efforts include the introduction of transfers of higher efficiency and changing to energy-conserving fluorescent lamps.

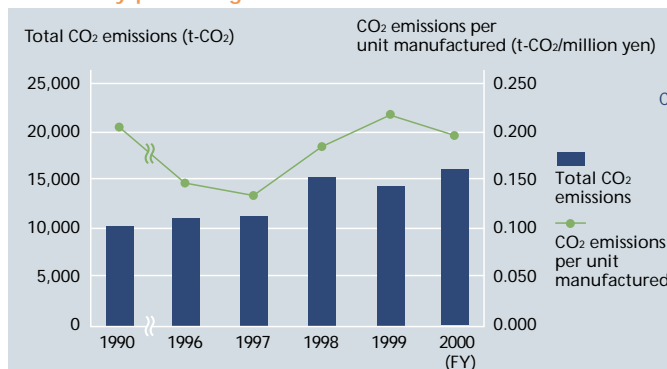
•Assembly/Processing Facilities

Activities in fiscal 2000

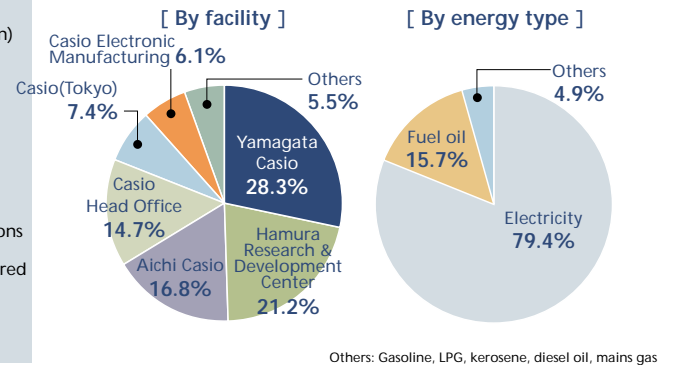
Total CO₂ emissions during fiscal 2000 from our assembly/processing facilities increased to 16,633 t-CO₂, up 13.8% from fiscal 1999. This increase was due to the 28.9% increase in production, the addition of figures for another facility (under Yamagata Casio), Casio Media System and CCP, and the increased emissions at Casio Electronic Manufacturing to the report. However, CO₂ emissions per unit manufactured were 0.198 t-CO₂ per million yen, down 11.6% from fiscal 1999, thanks to increased energy efficiency at the manufacturing facilities and the acquisition of ISO 14001 certification at Casio Computer's Head Office, Tokyo Product Control and Technical Center, and the Hamura Research & Development Center, which encouraged further promotion of energy conservation efforts.

Among plants and facilities, CO₂ emissions were the highest at Yamagata Casio, which represented 28.3% of emissions at all assembly/processing facilities. In terms of energy type, electricity accounted for 79.4% of all energy consumption.

Total CO₂ emissions and CO₂ emissions per unit manufactured at assembly/processing facilities



CO₂ emissions in fiscal 2000



Future Efforts

Continued efforts will be made at the assembly/processing facilities to reduce energy consumption (by turning off all unnecessary OA equipment and lighting) and to conduct energy conservation diagnosis by specialists through the pursuit of increased energy efficiency at all offices.

Other efforts planned include the introduction of control systems for air conditioning and changing to energy-conserving fluorescent lamps.

Reduction of Waste by Resource Conservation and Recycling

Target

By fiscal 2010, to reduce final landfill disposal of waste to zero.

Zero emissions by fiscal 2005 (revised in fiscal 2001)

30% reduction of waste per unit manufactured by fiscal 2005 (new target set in fiscal 2001)

•Summary of Fiscal 2000 Results

Waste generation in fiscal 2000 in all facilities covered in this report totaled 6,614 t, up 50.1% from fiscal 1999. The increase was due to a 28.7% increase in overall production and the addition to the report of figures for two electronic component facilities (Kofu Casio, Casio Micronics) and for one assembly/processing facility (Yamagata Casio) plus two companies (Casio Media Systems and CCP).

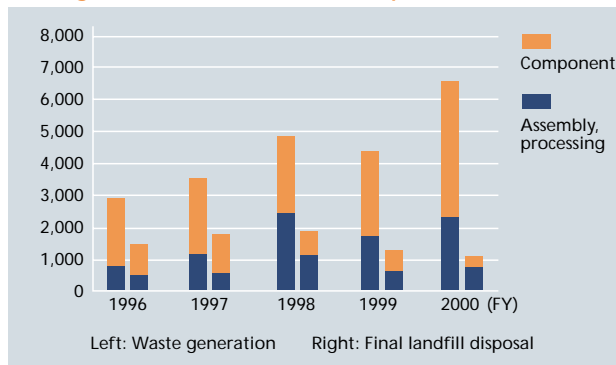
The amount of final landfill disposal was 1,087 t, down 11.1% from fiscal 1999, thanks to recycling efforts such as the reuse of waste plastics (RDF) and glass debris.

Waste generation, final landfill disposal, and waste per unit manufactured

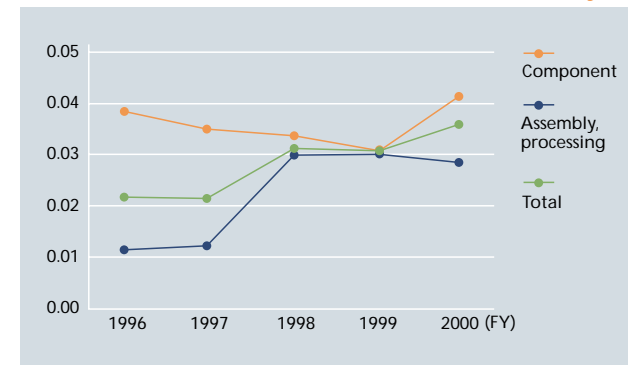
	FY	1996	1997	1998	1999	2000
Waste (t)	Component	2,054	2,318	2,333	2,455	4,226
	Assembly	921	1,146	2,468	1,950	2,388
	Total*	2,975	3,464	4,801	4,405	6,614
Final landfill disposal (t)	Component	991	1,186	740	481	254
	Assembly	612	628	1,161	743	834
	Total*	1,603	1,814	1,901	1,223	1,087
Waste per unit manufactured (t/million yen)	Component	0.0385	0.0347	0.0343	0.0308	0.0412
	Assembly	0.0116	0.0127	0.0297	0.0299	0.0284
	Total	0.0224	0.0221	0.0318	0.0304	0.0354

Note: Final landfill disposal in fiscal 1996 includes waste minimization due to no separate classification for minimization.
* Figures are rounded up.

Waste generation and final landfill disposal (t)



Waste generation factor of production per unit manufactured (t/million yen)



•Electronic Component Facilities

Programs in Fiscal 2000

Total waste generation during fiscal 2000 from our electronic component facilities increased sharply to 4,226 t, up 72.1% from fiscal 1999. This increase was due to a 28.5% increase in production, the addition to the report of the figures for two facilities (Kofu Casio and Casio Micronics), and increased production at Kochi Casio which inevitably led to the need for disposal of waste alkalis by an external disposal contractor. However, final landfill disposal fell to 254 t, down 47.2% from fiscal 1999, thanks mainly to the recycling efforts at Kofu Casio. This figure represents 23.4% of the final landfill disposal at all plants and facilities covered in this report.

The volume of waste generated was the highest at Kofu Casio, which accounted for 38.5% of the total for all electronic component facilities. However, the final landfill disposal ratio was reduced significantly to only 0.4% as a result of RDF of waste plastics and recycling of glass debris for use as paving materials. The final landfill disposal was the highest at Kochi Casio, which accounted for 59.6% of the total for all electronic component facilities.

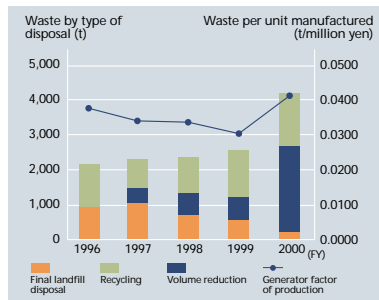
In terms of waste type, the amount of generation was high for sludge, waste alkalis, waste oil, and waste plastics, although waste plastics alone accounted for more than 50% of the total amount of final landfill disposal. Reduction of the generation of waste plastics, therefore, is an urgent task.

Glossary

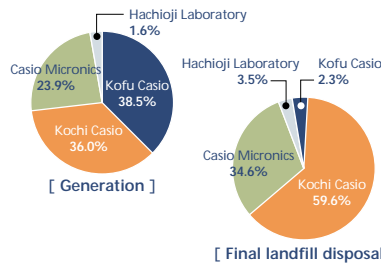
RDF

Refuse Derived Fuel. Plastics and other combustible wastes are crushed and screened, and then compressed and formed into solid blocks for use as fuel.

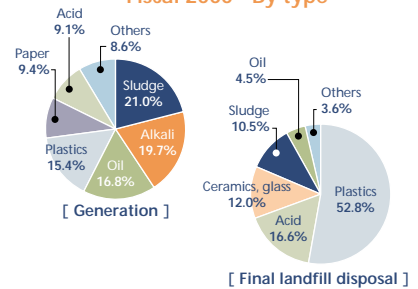
Waste Generation and Waste Per Unit by Electronic Component Facilities



Fiscal 2000 - By facility



Fiscal 2000 - By type



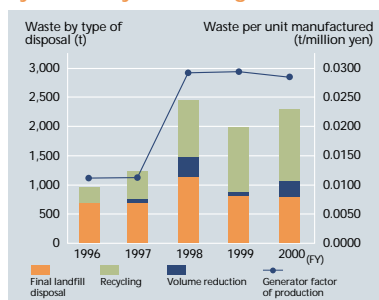
•Assembly/Processing Facilities Activities in Fiscal 2000

Total waste generation during fiscal 2000 from our assembly/processing facilities increased to 2,388 t, up 22.5% from fiscal 1999. This increase was due to the addition of Casio Media Systems and CCP and the increased generation of waste metal at Casio Refre. The amount of final landfill disposal also increased to 834t, up 12.2% from fiscal 1999.

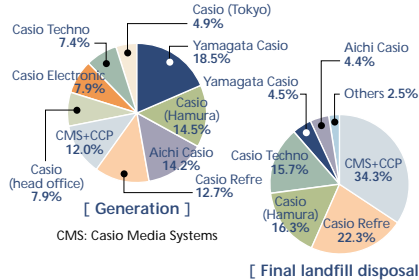
The amount of waste generation was the highest at Yamagata Casio, which accounted for 18.5% of all device assembly/processing facilities. However, the final landfill disposal ratio was reduced significantly to only 8.5% as a result of RDF of waste plastics. The final landfill disposal was the highest at Casio Media Systems and CCP, which accounted for 34.3% of the total for all assembly/processing facilities.

In terms of waste type, the volume generated was high for waste plastics and paper, with waste plastics alone accounting for nearly 90% of final landfill disposal. Reduction and recycling of waste plastics, therefore, is an urgent task facing, as well as the electronic component facilities.

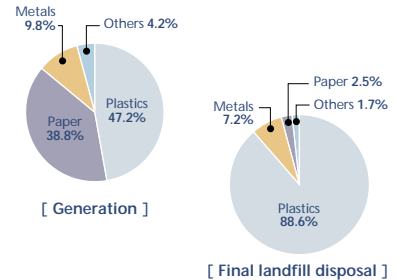
Waste Generation and Waste Per Unit by Assembly/Processing Facilities



Fiscal 2000 - By facility



Fiscal 2000 - By type



Future Efforts at Electronic Component and Product Assembly/Processing Facilities

Recycling of waste plastics is an urgent task facing both groups. Efforts will continue aimed at thorough sorting of plastic and other mixed waste and exploring recycling contractors while promoting the repeated use of plastic trays from our suppliers.

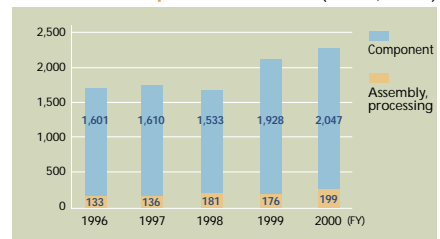
Continued efforts will be made at the electronic component facilities to recycle glass debris and waste acid.

Use of Water Resources

The volume of water used in fiscal 2000 at the facilities covered in this report was 2,246,000 m³, up 6.7% from fiscal 1999. Large volumes of water are used at electronic component facilities. These facilities accounted for 91.1% (2,047,000 m³) of the total amount of water consumption in fiscal 2000 at all facilities covered in this report.

The water purification plant installed at Casio Micronics' Yamanashi facility (a electronic component facility) is capable of saving 40,000 m³ of water per year, while a similar plant recently modified at Kochi Casio can save 86,000 m³ of water per year.

Water consumption (Unit: 1,000 m³)



Management of Chemical Substances

•Management of Chemical Substances (PRTR)

The Casio Group has accurately calculated or measured the volume of release and transfer of 354 substances designated as Class I chemical substances defined under the Law Concerning the Reporting of the Release into the Environment of Specific Chemical Substances and Promoting Improvements in their Management (PRTR law).

We are also working closely in accordance with the PRTR Guidelines for the Electronics and Electric Industry (revised in March 2001). Our mass balance study of Class I designated chemical substances (annual amount over 1 ton) and specified Class I designated chemical substances (annual amount over 0.5 ton) revealed that release and transfer of the 7 substances (listed below) need to be reported in fiscal 2000.

Release and Transfer of Class I Designated Chemical Substances in Fiscal 2000 (Tons)

Substance name	No. of reporting facilities	Substance No.	CAS No.	Amount	Release to				Transfer to		Consumption	Removal	Recycled (paid)
					Air	Public water supply	Soil at site	Landfill disposal at site	Sewage	Waste			
Xylene	1	63	1330-20-7	91.8	18.4	0.0	0.0	0.0	0.0	73.4	0.0	0.0	0.0
2-ethoxyethyl acetate	1	101	111-15-9	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1-dichloro-fluoroethane (HCFC-141b)	1	132	1717-00-6	19.0	18.3	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.2
Thiourea	2	181	62-56-6	6.4	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0
Copper salt (water-soluble, except complex salts)	2	207	group	27.2	0.0	0.0	0.0	0.0	0.0	27.2	0.0	0.0	0.0
Toluene	1	227	108-88-3	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hydrogen fluoride and its water-soluble salts	1	283	group	5.3	0.3	0.3	0.0	0.0	0.0	4.7	0.0	0.0	0.0

•Abolition of Use of Hazardous Substances

Targets

Substitute CFCs: To be discontinued by the end of 2001 at all domestic and overseas production sites

Chlorine solvents: To be discontinued by the end of 2000 at all domestic and overseas production sites

Results of Efforts

Abolition of Substitute CFCs

The Casio Group has promoted efforts to eradicate CFCs by eliminating the cleansing process and switching to water-based solvents, aiming to eliminate the use of specific CFCs and 1,1,1-trichloroethane, which are ozone-depleting substances. As a result, by the end of 1993, specific CFCs and 1,1,1-trichloroethane were eliminated.

At the end of fiscal 2000, one domestic and three overseas bases of the Casio Group were utilizing HCFC-141(b) as a substitute, but technological assessment for a method that completely eliminates the use of even these substitutes has been completed, and our plans call for eliminating their use by the end of 2001.

Abolition of Chlorine-containing Solvents

Similar efforts were made with regard to the elimination of chlorine-containing solvents by changing the cleaning process. As a result, their use ended at all domestic Casio Group facilities in 1994 and in all overseas facilities in fiscal 1999, thus achieving our goal of discontinuing use of chlorine-containing solvents at all domestic and overseas production sites by the end of 2000.

Hazardous Air-polluting Substances

The Casio Group does not use any of the 13 substances listed in the "Guidelines for promoting self-imposed control of hazardous air-polluting substance by companies," set forth in October 1996 by the Ministry of International Trade and Industry (currently METI, the Ministry of Economy, Trade and Industry).

13 Hazardous Air Pollutants

Acrylonitrile, acetaldehyde, vinyl chloride monomer, chloroform, 1,2-dichloroethane, dichloromethane, tetrachloroethylene, trichloroethylene, 1,3-butadiene, benzene, formaldehyde, trinickel disulfide, nickel sulfate

Glossary

PRTR

Pollutant Release and Transfer Register. A method of publication by the government, based on reports from industrial business operators, regarding the release (to air, water, and soil) and transfer of chemical substances hazardous to human health and the environment.

Substitute CFCs

Substitutes for ozone-depleting CFCs, used as cleaning agents for semiconductors and as refrigerants.

Prevention of Air and Water Pollution

The Casio Group is making efforts to prevent air and water pollution by setting its own strict standards that exceed legal and regulatory emission standards.

Kochi Casio, which produces LCDs devices, has the largest number of facilities within the Group that are subject to anti-pollution air and water regulations. Their gas and water quality levels (listed below) in fiscal 2000 fall within the Group's voluntary standards, thus complying with the legal regulations. The same regulations were met at all other facilities in fiscal 2000.

Gas Quality Level at Smoke-Emitting Facilities

Kochi Casio (Fiscal 2000)

Item	Facility	No. of facilities	Standard		Max. measured value ^{*1}				
			Prefectural	Voluntary					
Soot and dust (g/m ³ N)	Cold/warm water generator	2	0.3	0.1	< 0.01	< 0.01	—	—	—
	Absorption refrigerator	2	0.3	0.1	< 0.01	< 0.01	—	—	—
	Boiler	5	0.3	0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NOx (ppm)	Cold/warm water generator	2	180	140	52	65	—	—	—
	Absorption refrigerator	2	180	140	74	51	—	—	—
	Boiler	5	180	140	40	60	66	71	81
SOx (K value)	Cold/warm water generator	2	17.5	1.0	0.18	< 0.10	—	—	—
	Absorption refrigerator	2	17.5	1.0	0.53	0.29	—	—	—
	Boiler	5	17.5	1.0	0.12	0.07	0.15	0.12	0.14

*1: Numbers - identify the facilities.

Water Quality Levels

Kochi Casio (Fiscal 2000)

Item	Standard		Measured values	
	Prefectural	Voluntary	Max.	Average ^{*1}
pH	5.8 ~ 8.6	6.1 ~ 8.3	7.8	7.3
BOD (mg/L)	50 (40)	16	15.1	6.8
SS (mg/L)	90 (70)	20	7	4.1
n-hexane extractives (mg/L)	5	4	< 1	< 1
Copper (mg/L)	3	0.8	0.41	0.19
Zinc (mg/L)	5	4	0.03	*
Soluble iron (mg/L)	10	8	0.37	*
Fluorine (mg/L)	15	9	4.2	1.7
Lead (mg/L)	0.1	0.08	< 0.01	< 0.01

*1: ** Undetected data is included in measured values.

Risk Management

•Complaints and accidents

No complaints or accidents of an environmental nature occurred during fiscal 2000.

•Storage of PCB-Containing Equipment

Detoxify PCB-containing equipment in storage by fiscal 2005 (new target set in fiscal 2001)

A total of 14 PCB-contained condensers are stored at four domestic facilities as of the end of fiscal 2000. They are kept in a special fall-prevention iron structure and regularly maintained. We are now seeking a way of making them harmless by proper contracted treatment in line with the target.

Glossary

K Value

A locally defined constant used in the calculation of the emission standard for SOx (given below) relative to the height of the exit of each smoke-emitting facility.

$$\text{SOx emissions} = K \times (\text{Height of exit})^2 \times 10^{-3}$$

PCB

Harmful organic chlorides that cause skin irritation or liver malfunction, often used as insulator in condensers, as heating medium or as an additive in printing inks. Production ended in 1972 under the guidance of the Ministry of International Trade and Industry (currently, METI).

Target

To introduce green procurement for materials by the end of fiscal 2000

Green procurement level of 80% with domestic suppliers by fiscal 2003 (target revised in fiscal 2001)

•Activities in Fiscal 2000

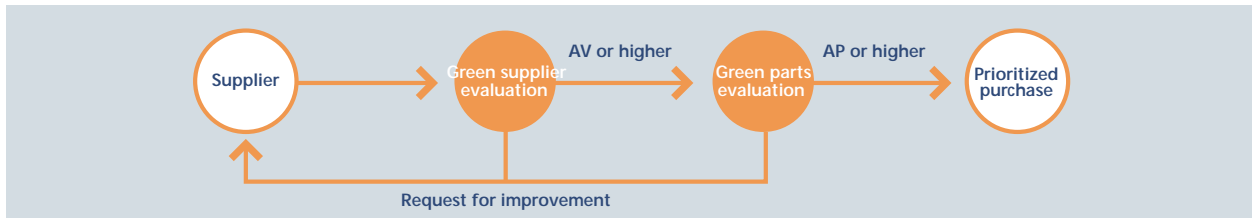
In September 1999, Casio Computer published and distributed to its suppliers, its fundamental ideas in the form of the Green Procurement Guideline to vigorously promote green procurement which is prioritized purchasing to products, parts and materials having lower environmental impact for the environmentally conscious product manufacturing.

In November 2000, the guideline set the basis for the "Standards Manual for Green Procurement" that defines the criteria for evaluating the environmental management and design compatibility of supplies and parts provided by the company's suppliers. The manual was introduced officially to the suppliers to encourage their understanding and cooperation.



Introductory session for suppliers (November 2000)

Mechanism of Green Procurement



Casio Group Standards Manual for Green Procurement

Evaluation of Green Suppliers

Method: Evaluate supplier's environmental management system

Result: Suppliers are ranked from SV to CV

Rank	Total score	Criteria
SV	100	Prioritized transaction
AV	90-70	
BV	60-30	Improvement requested
CV	20 or lower	No new orders issued

Evaluation of Green Parts

Method: Evaluate products from prioritized suppliers (AV or higher) against 9 environmental design standards

Result: Products are ranked from SP to CP

Rank	Total score	Criteria
SP	100	Prioritized procurement
AP	90-70	
BP	60-0	Improvement requested
CP	Under 0	Purchase terminated

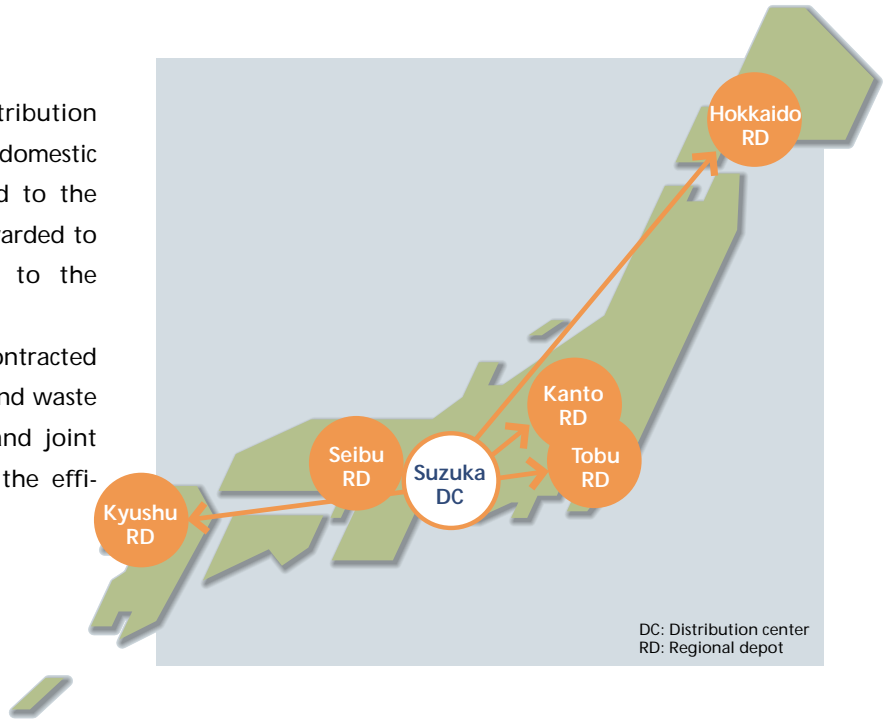
•Future Efforts

We will continue our efforts to raise our green procurement level, increase the number of green suppliers. We will vigorously adopt green parts in our design and materials departments since fiscal 2001. We will also develop green procurement activities, based on the Standards Manual for Green Procurement, in material procurement among the Group companies.

•Domestic Distribution Network

In the Casio Group's domestic distribution network, finished products from our domestic and overseas suppliers are delivered to the Suzuka Distribution Center (DC), forwarded to regional depots (RD), and finally to the retailers and other customers.

Casio Computer Co., Ltd., has contracted transportation, unpacking, packing, and waste disposal with external companies, and joint efforts are being made to increase the efficiency of distribution.



•Reducing CO₂ Emissions by Modal Shifting

Special efforts are being made to use railroad containers to minimize the generation of CO₂ emissions during distribution. In fiscal 2000, railroad transportation accounted for 79.1% of the total transportation distances from Suzuka DC to RDs (5,803,812t-km). This is equivalent to a reduction of 707t^{*1} on the CO₂ emissions normally caused by road transportation.

*1: $5,803,812(t\text{-km}) \times 79.1(\%) \times (48-6)g-C \div 44 \div 12 = 707(t\text{-CO}_2)$
 Comparison of CO₂ emissions based on data on domestic measures regarding global warming issues: 48g-C/t-km (vehicle) vs. 6g-C/t-km (railroad)

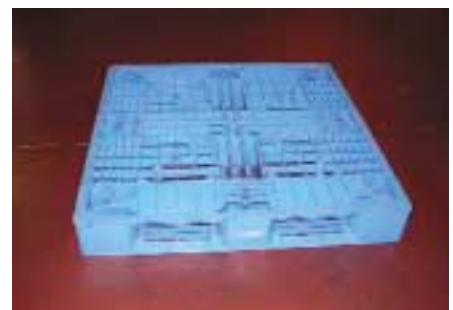
•Reducing CO₂ Emissions by using Courier Services

Use of chartered trucking companies for delivering Casio products exclusively from the delivery centers to the customers is being switched to non-exclusive courier services. In fiscal 2000, 11.5 numbers of 2-ton chartered vehicles (average 925km/year) at our Tobu RD and Chubu RD (now merged with Seibu RD) were switched to courier services, thereby contributing to 3.7t^{*2} reduction of CO₂ emissions from fiscal 1999.

*2: $11.5 \text{ trucks} \times 925\text{km} \times 2\text{t} \times 48\text{g-C} \div 44 \div 12 = 3.7\text{t-CO}_2$

•Using Environmentally Conscious Distribution Materials

Plastic pallets are now used for storing products. This not only increases their useful life but also allows the recycling of used pallets. This is another way of saving resources and reducing industrial waste.



Plastic pallet for storing products

Glossary

Modal shift

Changing the mode of freight transportation from the currently prevailing road transport to a means with greater capacity (railroads, etc.)

Social Contribution

•International Dolphin & Whale Conference

Casio Computer Co., Ltd. has been a sponsor of the International Dolphin & Whale Conference since 1994. The official models of Casio G-Shock & Baby-G watches, in support of the “Dolphin & Whale Eco-Research Network” project, were introduced to the market in 2001. Part of the profits from their sales will be donated to the project to contribute to the conservation of the environment for dolphins and whales.



G-SHOCK&Baby-G

•Co-sponsorship for “It All Begins with a Tree”

A special TV program, “It All Begins with a Tree” was aired (January 2, 2001) under the theme of planting trees on Mt. Everest and protecting Himalayan nature. Casio Computer Co., Ltd. supported the project, and our president appeared in this special program in person to explain how the company is making vigorous efforts to assist the conservation of the environment.



Aired on TV Tokyo on January 2, 2001

•Local Environmental Activities

As good corporate citizens, the Casio Group companies engage in various environmental activities in local communities such as cleaning up the roads and rivers near their facilities.

Local Environmental Activities (Fiscal 2000)

Site	Date	Description
Kofu Casio	June 2000 Dec. 2000	“Cleanup Day” - 154 employees in June 147 in December
Kochi Casio	Feb. 2001	“Clean River Kokubu” - 33 employees
Casio Micronics Yamanashi	July 2000	“Cleanup Day” - 15 employees

•Casio Science Promotion Foundation

The Casio Science Promotion Foundation was established in 1982 with the aim of subsidizing science (electrical and mechanical engineering) and humanities studies by research institutes and individuals. Because it was the company's wish to promote science and contribute to the progress of science and society. “Environmental electronics” (studies on energy and resource conservation, etc.) is one of our areas of our special interest.

Communication

In addition to publishing our Environmental Report, Casio Computer Co., Ltd., is making its corporate information available in real time to the public through its websites, company brochures, annual reports, exhibitions, etc.

The company took part in the Eco-Products 1999, the first trade show for environmentally conscious products. We plan to take part in the Eco-Products this year (December 2001) for the third time in a row.

The first Environmental Report was published in December 1999 in which the environmental conservation activities of the Casio Group were presented in detail. Today, this has become an annual publication.

Casio Computer Co., Ltd., as a member of the environmental committee and its ad-hoc committees of the Japan Business Machine Makers Association, the Japan Machinery Exporters' Association, and the Japan Clock & Watch Association, is also making positive efforts towards environmental conservation at the industrial level.



Casio's booth at Eco-Products 2000at Tokyo Big Sight (December 2000)

Glossary

International Dolphin & Whale Conference

Started in 1988 by I-Search Australia and held every two years in search of new values and awareness that link to a better future for the global environment and our lives rather than discussing dolphins and whales alone.

Eco-Products

An annual trade show held each December at Tokyo Big Sight to introduce and promote the use of environmentally conscious products and services (high environmental efficiency in terms of life cycle) to contribute to the development of a recycling-oriented society.

"Draft Guidelines for Evaluating Environmental Cost and Publicly Disclosing Environmental Accounting Information" were published in March 1999 by the Environment Agency (currently the Ministry of the Environment: MOE). These guidelines motivated the Casio Group to organize a special committee on environmental accounting as a useful tool for making decisions regarding corporate environmental management. Special efforts were made to build a new system for environmental accounting that would also serve as a tool for disclosing information to our domestic and overseas stakeholders.

The official introduction of the system was set for fiscal 2000, and the costs and economic effects of environmental conservation were calculated in accordance with the "Guidelines for Developing an Environmental Accounting System (Year 2000 Report)" issued by the Environment Agency (currently the MOE). The calculation was done in much the same way as for the data regarding environmental impact covered in this report. Casio Computer's 4 sites and 10 domestic Group companies are accounted for while distinguishing between the electronic component facilities and the assembly/processing facilities of the Casio Group.

The environmental conservation costs for fiscal 2000 are shown below, including environmental capital investment of 665 million yen, expenses of 897 million yen, and economic benefits of 314 million yen. The electronic components sector represented 15% of our consolidated sales at the end of fiscal 2001, while it accounted for 65% with respect to environmental capital investment and 40% in environmental conservation costs.

Capital investment included approximately 420 million yen for equipment designed to prevent pollution and for the conservation of the global environment at Casio Micronics and Casio Electronic Manufacturing Co., Ltd.

When determining the economic benefits, only "economic benefits calculated based on a credible basis" are considered, while those "based on hypothetical calculations such as the avoidance of environmental damage" (so-called apparent effects) were omitted from calculation.

Environmental Conservation Costs

(Millions of yen)

Category	Contents	Capital Investment			Assembly/processing			
		Component	Assembly, processing	Total	Component	Assembly, processing	Total	
Business area costs		435	220	655	281	189	470	
Breakdown	(1) Pollution prevention costs	Prevention of air pollution, water contamination, odors, etc.	300	211	511	107	11	118
	(2) Global environmental costs	Prevention of global warming, chemicals management, etc.	128	0	128	9	5	14
	(3) Resource circulation costs	Reduction and recycling of wastes, etc.	7	9	16	165	173	338
Upstream/downstream costs	Green procurement, collection and recycling of consumables and packaging materials, etc.	0	0	0	0	82	82	
Management activity costs	Development and maintenance of environmental management systems, etc.	0	1	1	67	146	213	
Research and development costs	R&D on Green products, lead-free solder, packaging materials, etc.	0	8	8	0	90	90	
Social activity costs	Tree planting, publication of Environmental Report, donations to NGOs, etc.	1	0	1	15	27	42	
Environmental damage costs	Soil decontamination, etc.	0	0	0	0	0	0	
Environmental conservation cost total		436	229	665	363	534	897	

Note: Capital investments and costs, only part of which are devoted to environmental conservation, are determined by deduction or proportional calculation.

Economic Benefits associated with Environmental Measures

(Millions of yen)

Effects	Amount		
	Component	Assembly, processing	Total
Sales of used parts, materials, and other valuable goods	6	15	21
Cost reduction by resource reuse ^{*1}	2	185	187
Cost reduction by energy/resource conservation	92	14	106
Total effects	100	214	314

*1: Parts reuse for reduction of parts purchase

•Future efforts

Numerous attempts are being made to standardize environmental accounting standards. The Casio Group will work on the expansion of the scope of accounting, enhancement of data accuracy, disclosure of detailed information, economic benefits based on hypothetical calculations, etc., in search of an optimal environmental accounting system.

Glossary

Stakeholders

Individuals and organizations influenced by corporate activities. Generally include shareholders, employees (workers), suppliers, customers, banks, and communities.

Guidelines for Developing an Environmental Accounting System

Basic directions (basic guidelines) for environmental accounting contained in the "Environmental Accounting Guidebook" published in March 2000 by the former Ministry of the Environment. Principles that apply in common to the basic portion of the environmental accounting.

History of Environmental Conservation Activities

Year	Month	The Casio Group's environmental conservation activities	Year	Important environmental developments
1991	8	Inauguration of the Casio Environmental Conservation Committee	1991	
1992			1992	Earth Summit
1993	1	Establishment of the Casio Environmental Charter and CVPE	1993	Legislation of Environmental Basic Law
	12	Abolition of specific CFCs and 1,1,1-trichloroethane		
1994	10	Revision of CVPE (Second Edition)	1994	Promulgation of UN Framework Convention on Climate Change
1995	4	Publication of Environmental Pamphlet	1995	Law for Recycling Containers and Packaging comes into force
1996	4	Revision of CVPE (Third Edition)	1996	ISO14001 published
1997	2	Publication of Casio's environmental efforts on the company's website	1997	Waste Disposal and Public Cleaning Law amended
	5	Revision of Environmental Pamphlet		COP3 held in Kyoto
1998	7	Revision of CVPE (Fourth Edition)	1998	Energy Conservation Law amended
				Law regarding the Promotion of Global Warming Prevention Measures
1999	6	Establishment of Casio Group Environmental Targets (Clean & Green 21 Initiative)	1999	Law Concerning the Reporting of the Release into the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) comes into force
	9	Establishment of Green Procurement Guidelines		
		Revision of CVPE (Fifth Edition)		
	12	Publication of Environmental Report 1999 Exhibit at Eco-Products 1999		
2000	3	Completed acquiring ISO 14001 certification of all domestic manufacturing facilities	2000	Basic Law for the Promotion of Formation of a Recycling-Oriented Society comes into force
	4	Introduction of environmental accounting		Waste Disposal and Public Cleaning Law amended
	6	Initiation of the full-scale recovery of printer drum and toner sets		Law for Promotion of Utilization of Recycled Resources
	8	Publication of Environmental Report 2000		Law on Promoting Green Purchasing comes into force
		11		Publication of the manual of "Standards Manual for Green Procurement" for suppliers Revision of CVPE (Sixth Edition)
	12	Completed acquiring ISO 14001 certification at four Casio Computer facilities		
		Exhibit at Eco-Products 2000		

Environmental Conservation Awards (Fiscal 2000)

Facility		Award	Awarded by
Casio Computer Co., Ltd.	Tokyo Product Control and Technical Center	Award for Distinguished Service by Hazardous Materials Handling Personnel	Tokyo Fire Department Fire Prevention Division
		Outstanding Energy Management Facility Awarded by the Kanto Region Electricity Usage Rationalization Committee	Kanto Region Electricity Usage Rationalization Committee

Past Awards and Prizes for Environmental Conservation Activities

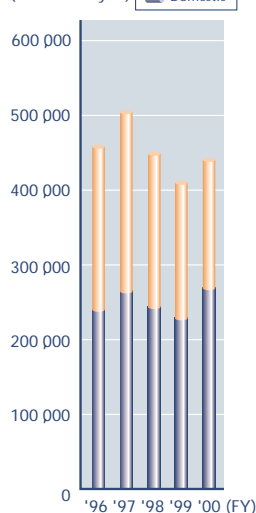
Date	Facility	Prize or Award	Reason for Award
February 1995	Kochi Casio Co., Ltd.	Shikoku Regional Electric Power Usage Association Chair's Award for Factory Energy Management Excellence	Highly commendable management of electric power consumption at factories and offices
May 1995	Aichi Casio Co., Ltd.	Chair's Award from Aichi Prefecture Industrial Site Improvement Association	Addition of gardens and greenery to factory area environment
February 1997	Kochi Casio Co., Ltd.	Director's Award from the Shikoku Trade and Industry Bureau for Factory Energy Management Excellence	Highly commendable management of electric power consumption at factories and offices
February 1998	Hamura Research & Development Center	Best Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Upgraded efficiency of electric power use
February 1998	Casio Micronics Co., Ltd.	Outstanding Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Upgraded efficiency of electric power use
February 1999	Head Office	Outstanding Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Adoption of measures to streamline facility operation and reduce energy consumption
February 2000	Hamura Research & Development Center	Best Energy Management Facility Award from the Kanto Region Electricity Usage Rationalization Committee	Upgraded efficiency of electric power use

Consolidated Financial Highlights

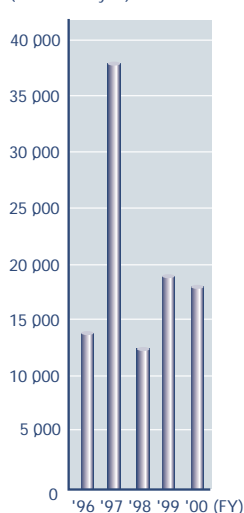
(Millions of yen)

	Fiscal 1996	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000
Net sales	459 105	502 012	451 141	410 338	443 930
Domestic	244 414	268 202	245 180	231 181	269 536
Overseas	214 691	233 810	205 961	179 157	174 394
Operating income	14 370	37 757	12 551	19 477	17 905
Total assets	496 947	537 013	506 566	507 105	445 883
Shareholders' equity	174 528	182 657	170 721	169 634	162 375
Capital investment	25 937	53 824	31 212	35 546	30 278
Employees	18 725	18 668	17 269	19 325	18 119

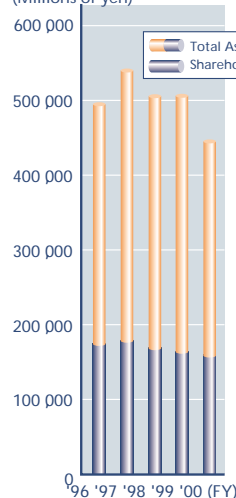
Net Sales (Millions of yen)



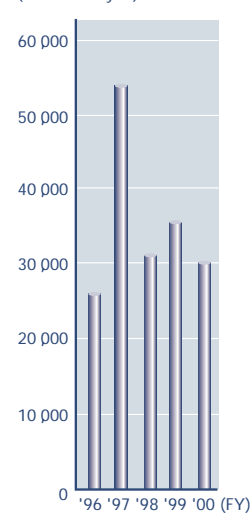
Operating Income (Millions of yen)



Total Assets and Shareholders' Equity (Millions of yen)



Capital Investment (Millions of yen)



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Date of publication: September 2001
 Next Planned Publication: September 2002

•Environmental Report 2001 is also available at Casio Computer's website: <http://www.casio.co.jp/env/>

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This mark symbolizes all Casio Group activities in the 21st century



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