Cover photo

Dolphins have a special sense called 'echo location.' They can produce sound that is focused by a bulge on their foreheads and then projected toward objects in the water. Sounds that strike any object are reflected back to the dolphin, so that it can form a sound picture of objects. With this function, dolphins can detect not only a shoal of fish a few kilometers away but also the distance to an object as well as its size, shape, material and even water temperature. By learning about the amazing capability of living creatures, Omron strives to develop more innovative environmental technologies by drawing on its core competency, Sensing and Control.

Published in June 2002

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OMRON

OMRON Corporation
Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 Japan
For inquiries, contact the Quality and Environment Department, Corporate General Affairs Division.
Phone: (+81) 75-344-7033 Fax: (+81) 75-344-7088
URL: http://www.omron.com

OMRON Environmental Report 2002

Environmental Report 2002

Aiming to become a responsible and environmentally friendly corporate citizen

OMRON

Sensing tomorrow™

Contents

Editorial Policy

Prepared under guidelines published by the Ministry of the Environment (MOE), the Ministry of Economy, Trade and Industry (METI), and the Global Reporting Initiative (GRI)*, Omron's Environmental Report 2002 introduces Omron's environmental conservation activities from April 1, 2001 to March 31, 2002. Also covered are some of Omron's environmental plans and targets for the future. Our editorial policy is to focus on Omron's distinctive management philosophy and environmental commitment, its contribution to environmental protection through technological and product development, and other programs.

* GRI was established in late 1997 to develop globally applicable guidelines for reporting on economic, environmental and social performances of corporations, governmental bodies and non-governmental organizations. GRI Sustainability Reporting Guidelines represent the first global framework for comprehensive sustainability.

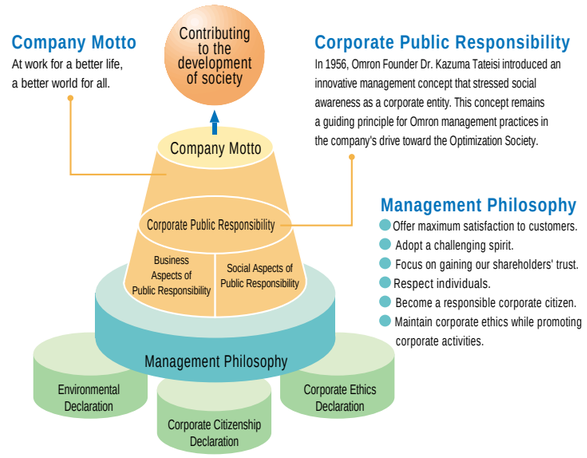
Operations covered in this report

This report covers environmental activities implemented by Omron Corporation and 12 major domestic affiliates (listed below).

- Omron Corporation
- Omron Iida Co., Ltd.
- Omron Sanyo Co., Ltd.
- Omron Aso Co., Ltd.
- Omron Ichinomiya Co., Ltd.
- Omron Matsuzaka Co., Ltd.
- Omron Kurayoshi Co., Ltd.
- Omron Takeo Co., Ltd.
- Omron Okayama Co., Ltd.
- Omron Kumamoto Co., Ltd.
- Omron Nohgata Co., Ltd.
- Omron Izumo Co., Ltd.
- Omron Kyoto Taiyo Co.,Ltd.

Data on activities carried out by overseas manufacturing subsidiaries are discussed on page 24.

Omron's Corporate Ideals and Environmental Declaration



Corporate Statement – **Sensing tomorrow**

Omron's new corporate statement was established as the core message to globally communicate its management philosophy and corporate value. Its meaning is as follows:

Omron seeks to be a company that cultivates tomorrow by anticipating future societies. As a pioneer in Sensing & Control technology, Omron aims to 'create tomorrow' by utilizing our wisdom and challenging spirit. Omron strives to become a corporation that is recognized for and sustained by fulfilling the expectations of all our stakeholders.

Environmental Declaration We pledge to aspire to harmonize with nature and work for a better environment through activities showing a strong sense of public responsibility.

Environmental Policy In accordance with our environmental declaration, we have made environmental issues one of our most important management concerns. All corporate activities, services and products of the Omron Group, including our microelectronics and service operations, will be subject to our environmental policy, as outlined below.

1	Basic Law Observance	Observances of the Environmental Basic Law and all related laws as well as maximun response possible prior to the enactment of such legislation and provision of voluntary standards to encourage preservation of the environment.
2	Response to Environmental Issues	Any environmental issue raised by an interested party will be responded to in good faith.
3	Support Structure	Appointment of Senior Environment Officer and establishment of a specialized corporate organization at Omron headquarters. Establishment of overall corporate organization, factory organizations and promotion of cooperative efforts among these organizations.
4	System	Establishment of Environmental Management System (EMS) compatible with ISO 14001.
5	Specific Goals	Each environment-related organization to select relevant goals from listed priorities and promote continual improvement of EMS and reduction of the burden our activities place on the environment. 1) Development of technology and products that contribute to a reduction of the burden our activities place on the environment for our customers. 2) Purchase of environmentally friendly materials, fixtures, fittings. 3) Activities to improve resource productivity. 4) Energy conservation to cut CO_2 emissions. 5) Pollution reduction and prevention in regional environments.
6	Determination and Review	Environmental improvement objectives and targets to be fixed, environmental audits to be conducted over fixed time frames, and environmental management to be reviewed, improved and maintained.
7	Instruction and Training	All staff to receive instruction on environmental policy and participate in related training activities.
8	Social Contribution	Active participation.
9	Disclosure	Environmental policy and strategies to be made available for public use in the appropriate form.

<Enacted: April 1, 1996; Reviewed: October 1, 1999>

Omron and the Optimization Society

Contributing to sustainable development of society by fulfilling public responsibilities.

Social awareness of a responsible corporate citizen

With a progressive, future-oriented strategy, Omron has consistently anticipated and quickly assessed new-age needs. By drawing on the company's proprietary sensing & control technology, Omron has developed a steady stream of products and systems that help reduce the environmental impact of the entire social system. Under Omron's new corporate statement, "Sensing tomorrow," we are committed to providing added value and cultivating new markets by maximizing its ability to accurately anticipate potential needs. This will allow us to contribute to creating a better society by fulfilling our public responsibilities. I believe that resolving the exhaustion of natural resources, energy sources and other environmental issues which were left mostly untouched during the previous century will become the central needs of the 21st century. Omron's mission is to provide effective solutions for these problems, a mission that perfectly matches our philosophy of stressing corporate social awareness and public responsibility.

The role of the company in the upcoming Optimization Society

The SINIC Theory developed by Omron founder Kazuma Tateisi anticipates the emergence of an 'Optimization Society' in the early 21st century. In this new society, people lead a more comfortable life by maintaining a harmonious relationship with machines. Two opposing values — the pursuit of efficiency vs. emphasis on the true joy of living and psychological gratification, or working life vs. home life, or individuals vs. the whole — will co-exist in perfect balance and merge with each other. This will result in an ideal harmony between people and machines, and between society and the environment.

Omron's long-term corporate vision, Grand Design 2010, launched in May 2001, was formulated around three key management concepts — Self-reliance, Co-existence and Creativity. With this vision, Omron strives to achieve an optimized corporate structure that maintains an international perspective emphasizing collaborations and alliances, encourages the self-dependence of individual employees and business units to seek fulfilling lives and work. It also maximizes creative potential. This raises the image of Omron to the level of a leading 21st century company.

To effectively accommodate ongoing changes, a company must also radically transform itself. In addition, corporate management that emphasizes social contributions and values its employees will become increasingly important. Aware of this, we will promote Omron's corporate citizenship activities even further aiming to co-exist with our society.

People-oriented management

The core of Omron's corporate philosophy is a people-oriented approach. This approach places individuals first when implementing management practices and promoting business activities. It grows in importance as the Optimization Society approaches. A people-oriented management system leads to management practices that care for the environment. Our belief is that through the promotion of an environmentally conscious management system Omron can make a sizable contribution to the sustainable development of our society.

June 2002

Yoshio Tateisi
Representative Director and Chief Executive Officer
OMRON Corporation

About Omron

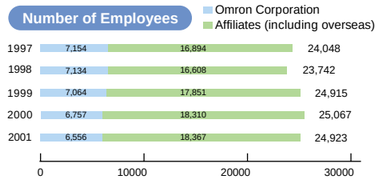
Corporate Data

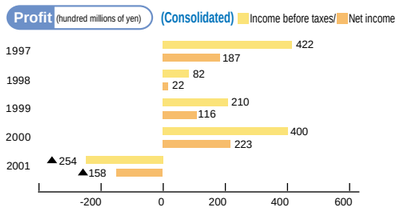
Company name OMRON Corporation
Established May 10, 1933
Incorporated May 19, 1948
Capital 64,081.78 million yen (As of March 31, 2002)

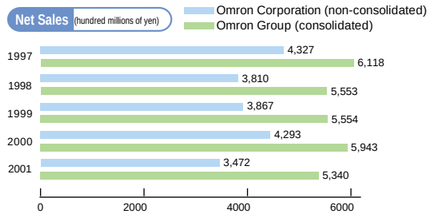

Omron Kyoto Center Building

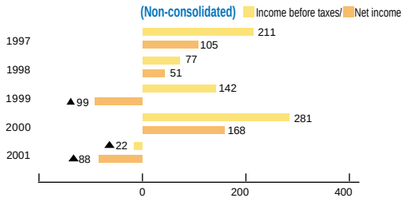
Main Omron Group offices and affiliates

• Omron Corporation (offices, factories and laboratories)
Kyoto Office, Tokyo Office, Osaki Office, Nagoya Office, Komaki AEC Office, Osaka Office, Mishima Factory, Kusatsu Factory, Ayabe Factory, Minakuchi Factory, Kyoto Laboratory, Tsukuba Laboratory, Kumamoto Laboratory
• 133 subsidiaries (52 domestic, 81 overseas) and 13 associated companies (8 domestic, 5 overseas)









Note: A net loss was recorded for FY'99 due to an additional retirement benefit allowance for the year which occurred because of a revision of our accounting practices.

Omron business lines (as of April 2002)

With its corporate philosophy, "To the machine the work of the machine, to man the thrill of further creation," Omron faces the challenge of improving life for future generations by drawing on its proprietary technology and maximizing its potential.
The major products of each business area are described below.

Industrial Automation Company (IAB)

- FA systems
(Programmable logic controllers, mechatronic components, servo motors and drives, etc.)
- Sensing components and equipment
(Proximity, photoelectric and other sensors, printed circuit board inspection systems, etc.)
- Industrial devices and components
(Limit and push-button switches, solid-state relays, supervisory and monitoring components, temperature controllers, timers, counters, etc.)

Electronic Components Company (ECB)

- Electronic and mechanical components
(Microswitches, operation switches, magnet relays, connectors, etc.)
- Automotive electronic components
(Power steering controllers, keyless entry systems, etc.)
- Semiconductors
(Custom ICs, micro-lens arrays, etc.)
- Office automation components
(Peripheral devices for copiers, etc.)
- Amusement components
(Custom components, devices and sub-systems for game machines, etc.)

Social Systems Business Company (SSB)

- EFTS (Electronic Fund Transfer Systems)
(Banking systems, retail systems, etc.)
- PITS (Public Information & Transfer Systems)
(Train station management systems, traffic control systems, parking systems, etc.)
- New businesses
("goopas" digital content distribution service, face recognition systems, etc.)

Healthcare Company (HCB)

- Healthcare equipment for homes and medical institutions
(Blood pressure monitors, nebulizers, electronic thermometers, low frequency wave treatment machines, massage chairs, body fat monitors, etc.)

Creative Service Company (CSB)

- Management support
(Management and administration support, finance, human resource services, etc.)
- Operation support
(Environment, energy-saving, facility, food, logistics, advertising services, etc.)
- Employee support
(Commodity sales and insurance services)

Business Development Group (BDG)

- PC peripherals
(Modems, fingerprint recognition systems, uninterruptible power supplies, etc.)
- Card-related business
(Card-related products, non-contact ID tag systems, etc.)
- M2M business
(Car anti-theft systems, etc.)
- Amusement systems
(Print seal machines, etc.)

Omron's environmental commitment

To promote environmentally conscious management practices, Omron established an Environmental Activity Committee in 1998. I am fully aware that my mission, as the chairman of this committee, is to guide the entire company toward environmental activities in order to minimize environmental impact on our social system.

Addressing environmental issues is a key management objective for Omron and thus must be carried out without delay. An efficient and scientific, data-based approach is also necessary for promoting the reduction of environmental impact. To reduce CO_2 emissions, some sites have implemented Omron power sensors to measure, monitor and analyze power consumption for each piece of equipment and for each manufacturing line. Although such efforts proved effective, they are insufficient if viewed from the perspective of the entire Omron Group. We must further reinforce our commitment to meet both CO_2 emission amount and CO_2 emission-to-unit production ratio targets, regardless of fluctuating production volume.

This year's environmental report includes partial environmental load data of some overseas manufacturing sites. Individual data for manufacturing sites in Japan can be viewed on the Omron website.

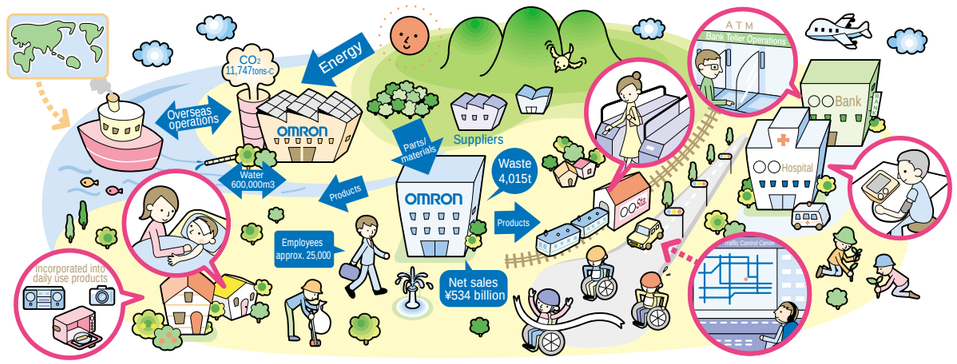
We hope this information helps to provide a better understanding of Omron's environmental activities. Any comments or opinions relating to our environmental conservation efforts would be most welcome.

Akio Imaizumi
Senior Managing Director
in charge of Quality and
Environmental Activities

History of Omron's Environmental Activities

1994	Environmental Charter established .	
	Omron stops use of CFCs in manufacturing .	
1995	Environmental Conservation Promotion Group established .	
1996	Environmental Policy established .	
	Ayabe Factory and Dutch manufacturing subsidiary receive ISO 14001 (first among Omron Group sites) .	
1997	E2E/E2E2 proximity switch receives Chairman's Award from Japan Machinery Federation for excellent energy saving features .	
1998	Environmental Activity Committee and sub-committees established to promote environmentally conscious management .	
	Environmental Declaration established by renewing Environmental Charter .	
	First Environmental Report published .	
	Eco-Product Certification System established .	
1999	May	All Omron production sites (30) both in and outside Japan obtain ISO 14001 certification .
	June	Suppliers notified of Omron's green procurement guidelines .
	October	Environmental Policy revised .
	October	Omron Aso receives 1999 Chairman's Award from Recycling Promotion Association .
	November	New Environmental Activity Committee founded .
2000	February	Omron Takeo receives Director of Kyushu Bureau of International Trade and Industry Award for energy management excellence .
	June	'Eco Grand Prix' awards established .
	June	Adoption of system requiring green procurement as a precondition for business disclosed to suppliers .
2001	March	ISO 14001 certification simultaneously acquired for nine offices and labs .
	April	Environmental accounting system launched for all domestic manufacturing sites .
	May	First 'Eco Grand Prix' awards presented .
	November	Kyoto Office and Mishima Factory receive Chairman's Award from Recycling Promotion Association .
2002	February	Mishima Factory receives Director of Kanto Bureau of Economy, Trade and Industry Award for energy management excellence .

● INPUT OUTPUT MAP ●



Environmental impact of corporate activities

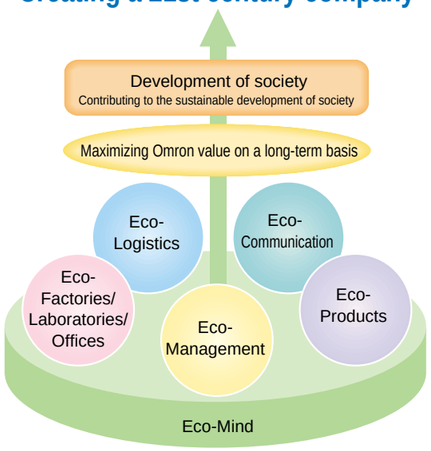
Omron's environmental impact is primarily generated from energy and resource consumption for manufacturing products. In the course of manufacturing, each of our work sites discharges industrial waste, chemical substances and CO_2 that causes global warming. Use of water is another major source of environmental impact. Omron is actively working on reducing the environmental harm of its manufacturing activities by identifying and assessing factors that impact the environment.

Green Omron 21 and Fiscal 2001 Results

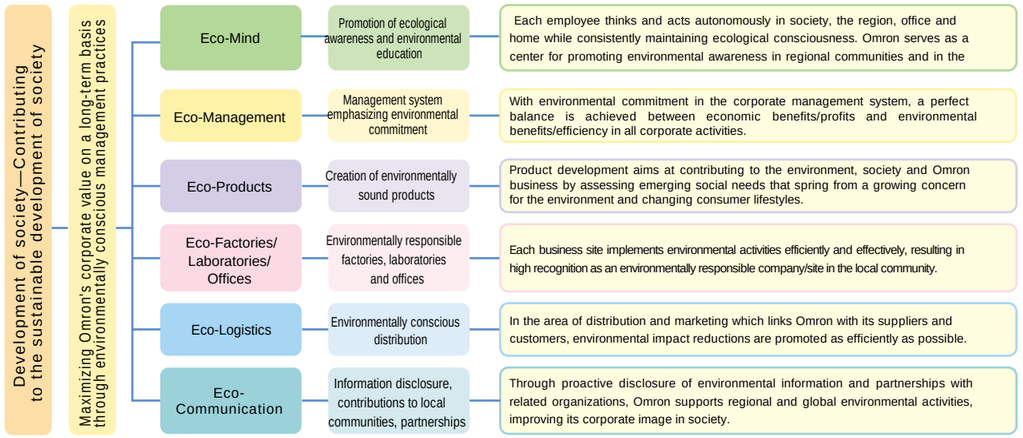
Environmental vision "Green Omron 21"

The current century is said to be "the century of the environment." Omron has formulated its environmental vision, "Green Omron 21," which specifies a well-defined environmental action plan for creating a leading "21st century company." This vision is intended to contribute to the sustainable development and growth of society by promoting environmentally conscious management practices and maximizing corporate value on a long-term basis. Centering around Eco-Mind, Green Omron 21 strives to promote environmental conservation in five key areas: Eco-Management, Eco-Products, Eco-Factories/Laboratories/Offices, Eco-Logistics and Eco-Communication.

Creating a 21st century company



Green Omron 21 goals



Omron's environmental action plan and fiscal 2001 results

Rating ○: Targets met △: Targets not completely met

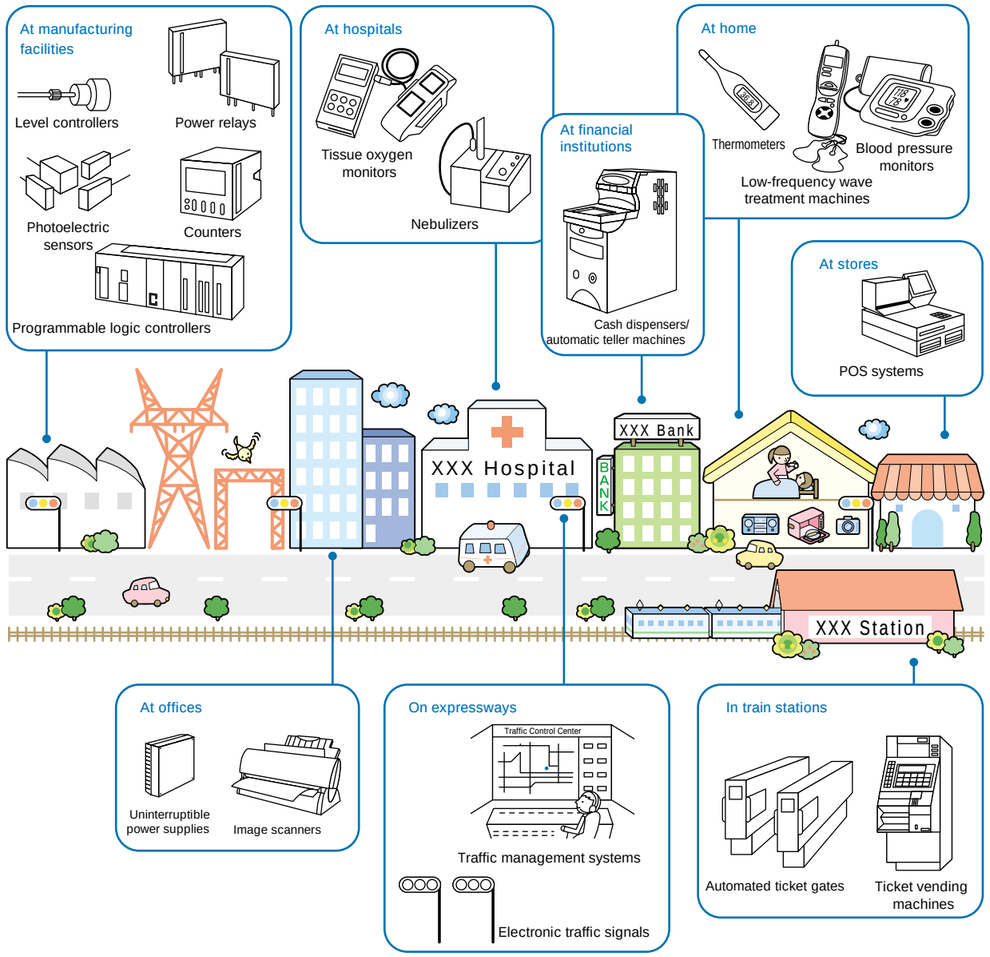
	Theme	FY 2003 Targets	FY 2005 Targets	FY 2001 Targets	FY 2001 Results	Rating	Page
Eco-Mind	Environmental education	●Launch environmental education program.	●Implement environmental education program throughout the Omron Group .	①Conduct environmental education for new employees. ②Conduct corporate-wide internal auditor training.	①Environmental education for new employees. ②Internal auditor training three times (Kyoto, Tokyo and Kumamoto).	○ ○	27 —
Eco-Mind	Promotion of environmental awareness	●Conduct seminars/presentations (at least once a year). ●Disclose environmental information. ● Raise employee awareness of ecology (such as by distributing Home-use Environmental Accounting Books).	●Expand the range of participants in seminars/presentations (at least once a year). ●Promote environmental information disclosure. ●Promote employee awareness of ecology (such as by distributing Home-use Environmental Accounting Books).	①Hold Environmental Conservation Month seminar yearly (June). ②Establish Eco Grand Prix Awards accompanied by first presentation. ③Invite and award employee suggestions during Environmental Conservation Month. ④Publish first edition of Home-use Environmental Accounting Book.	①Held June Environmental Conservation Month seminar. ②Presented Eco Grand Prix Award to one winner in each category of Eco-Products and Environmental Contributions. ③Suggestions submitted in June: 1,434. Three winners of the Award of Excellence and nine Merit Award winners selected. ④Home-use Environmental Accounting Books distributed to all Omron Corporation employees.	○ ○ ○ ○	27 — 27 27
Eco-Management	Environmental accounting system	●Gather and report environmental accounting data on a global basis and disclose information.	●Continue	① Launch environmental accounting system for 15 manufacturing sites. ② Prepare implementation of environmental accounting system for 10 offices and laboratories.	①Implemented at 15 manufacturing sites. ②Data gathering began in April 2002.	○ ○	26 26
Eco-Management	Pollution control/ environmental risk management	●No cases of law infringement, environmental accidents, claims or complaints.	●No cases of law infringement, environmental accidents, claims or complaints.	No cases of law infringement.	No cases of law infringement..	○	22
Eco-Management	ISO 14001 certification	●Maintain	●Maintain	Add Kyoto-Ekimae Office to group of ISO 14001 certified offices/laboratories.	Kyoto-Ekimae Office received ISO 14001 certification in March 2002.	○	25
Eco-Products	LCA system	●Continue LCA system implementation.	●Continue LCA system implementation.	Launch LCA system for 11 products.	Implemented LCA system for 7 products.	△	9
Eco-Products	Development and marketing of Eco-Products	●Raise percentage of new Eco-Products to 50%.	●Raise percentage of new Eco-Products to 100%.	Create 17 Eco-Products.	Created 18 Eco-Products.	○	13~16
Eco-Products	Creation of products with less or no hazardous chemical substances	●Specify the range of items subject to complete elimination of lead, cadmium and hexavalent chromium in new products and work to eliminate these. ●Totally abolish use of mercury and specified bromine-based nonflammable materials (PBB and PBDE).	●Specify the range of items subject to complete elimination of lead, cadmium and hexavalent chromium in all products and work to eliminate these. ●Totally abolish use of mercury and specified bromine-based nonflammable materials (PBB and PBDE).	Conduct technological evaluation of 41 lead-free products.	42 lead-free products completed.	○	12
Eco-Products	Promotion of green procurement	●Complete evaluation of suppliers in Japan. ●Launch overseas supplier evaluation and evaluation system for suppliers of overseas manufacturing sites.	●Put global green procurement system into operation.	Conduct preliminary evaluation based on green procurement standards.	Preliminary evaluation completed for 543 suppliers.	○	10
Eco-Products	Chemical substance control system	●Continue system implementation.	●Continue system implementation.	Build chemical substance control system.	Development of chemical substance control system completed.	△	21
Eco-Factories/ Laboratories/ Offices	Promotion of CO_2 emissions reduction	●Reduce CO_2 emissions by 5.7% (to 12,246 tons-C) compared to FY 1995.	●Reduce CO_2 emissions by 7.1% (to 12,062 tons-C) compared to FY 1995.	Reduce CO_2 emissions from energy usage to 12,430 tons-C (or by 4.3% compared to FY 1995)	Survey results: 11,747 tons-C (9.5% reduction from FY 1995).	○	18
Eco-Factories/ Laboratories/ Offices	Promotion of waste recycling	●Waste recycling rate: 96% or higher ●Final disposal rate: 2.7% or lower	●Waste recycling rate: 100% ●Final disposal rate: 0%	①Waste recycling rate: 87.5% or higher ②Final disposal rate: 9.5% or lower	①Waste recycling rate: 92.0% ②Final disposal rate: 4.9%	○ ○	19 19
Eco-Factories/ Laboratories/ Offices	Promotion of green procurement (indirect materials)	●Percentage of green products registered in indirect material procurement management system: 100%.	●Maintain	①Gather green product purchase data at offices and laboratories. ② Create indirect material procurement management system emphasizing green purchasing.	①Green product purchase rate at offices/laboratories: 74%. ②Indirect material procurement management system (SLIM) ready to launch operation in April 2002.	○ ○	10 10
Eco-Logistics	CO_2 emission reduction/ resource conservation for logistics operations	●Continue and expand mixed-cargo and collective transportation. ●Increase distribution efficiency. ●Promote resource conservation such as by eliminating corrugated cardboard.	●Continue and expand mixed-cargo and collective transportation. ●Increase distribution efficiency. ●Promote resource conservation such as by eliminating corrugated cardboard.	①Reduce use of trucks. ②Study possibility of eliminating corrugated cardboard.	①Reduction of two 10-ton trucks; replaced one truck with 5-ton railroad container. ②Conduct pre-survey for drafting action plan.	○ △	23 —
Eco-Communication	Promotion of environmental communication	●Publish environmental report yearly. ●Publish site environmental reports yearly. ●Update environmental website yearly. ●Participate in environmental exhibitions. ●Conduct volunteer activities for local environmental conservation at all major sites. ●Continue social contribution activities at all major sites.	●Continue environmental report publication. ●Publish individual site reports at all manufacturing sites both in and outside Japan. ●Update and maintain environmental website. ●Continue participating in environmental exhibitions. ●Hold environmental forums targeting external audience. ●Continue volunteer activities for environmental conservation and social contribution.	① Publish environmental report (Japanese and English). ② Publish site report (one site). ③ Disclose environmental information through website. ④ Participate in external environmental exhibitions. ⑤ Conduct environmental education for non-Omron parties. ⑥ Conduct activities to contribute to environmental conservation (Omron Day activities, etc.).	①Published environmental report (Japanese: 10,000 copies, English: 1,000 copies). ②Ayabe Factory published site report. ③Included environmental report and site report in Omron website. ④Participated in environmental exhibitions in Shiga, Tokyo, Fukuoka, Kyoto, etc. ⑤Conducted environmental education programs for educators and external companies. ⑥Carried out Omron Day activities at all sites. Performed volunteer forest preservation activities at Kyoto Office.	○ ○ ○ ○ ○ ○ ○	31 31 31 31 30 29

Omron Products in Society

Eco-Product development concept

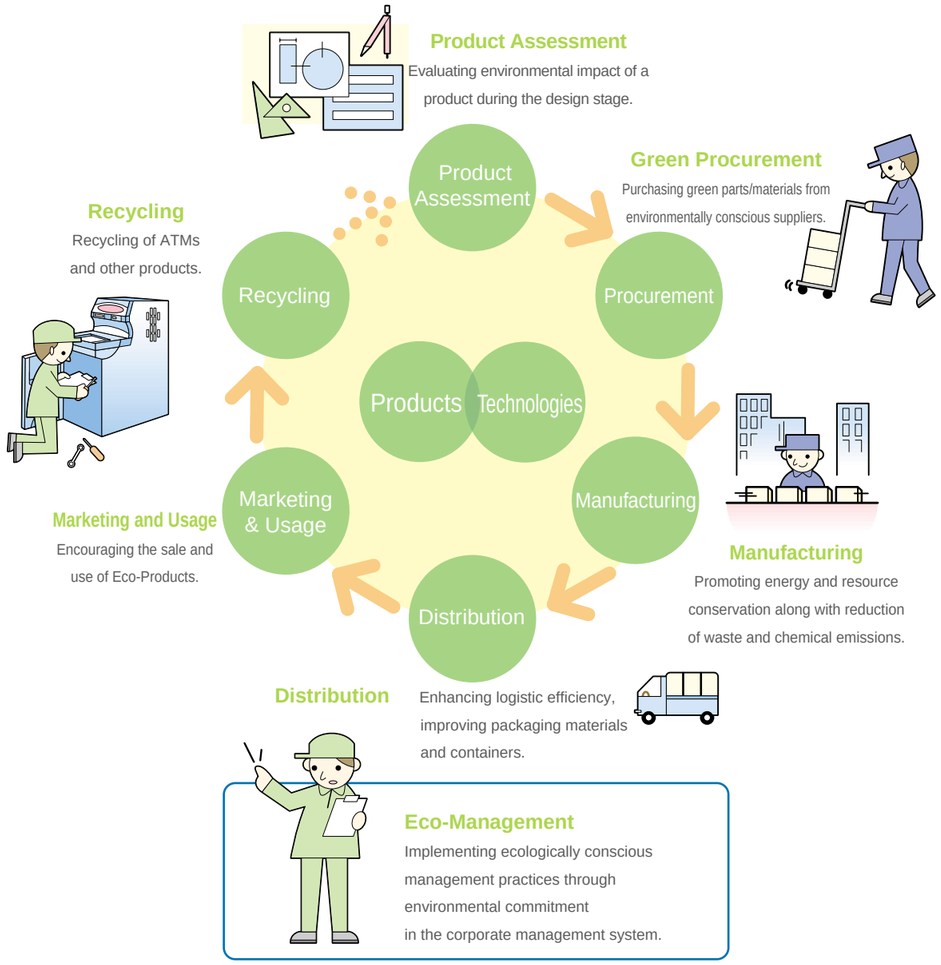
Our rapidly industrialized society of the 20th century has caused critical environmental problems such as global warming and energy source depletion. To help solve these problems, we must totally review the structure of society as a whole and transform it to one that recirculates resources and can achieve sustainable development. This will lead to a growing need for eco-friendly products. Omron is aggressively doing its share by lessening the environmental impact of societal activities through the development of environmentally sound products.

Omron products active everywhere



Environmental Performance

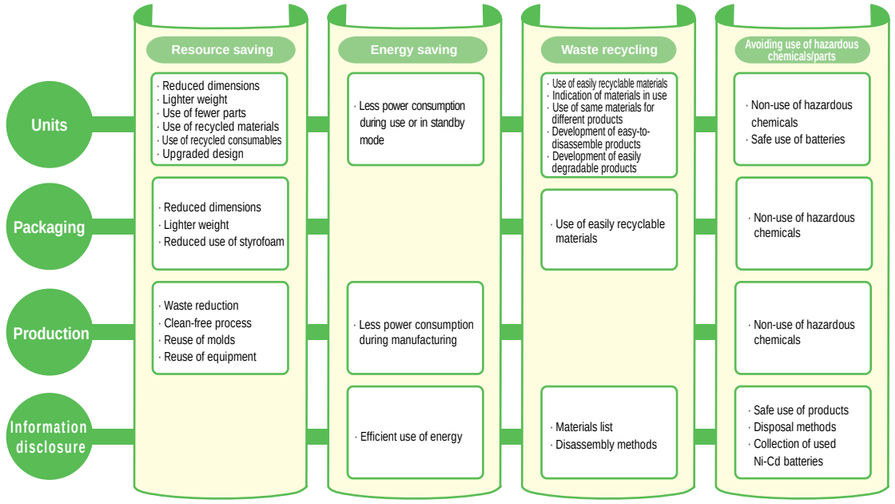
To reduce the environmental impact of its corporate activities,
Omron is committed to eco-friendly product development,
energy and resource conservation, reduction of waste, and recycling.
The following pages detail fiscal 2001 results and
environmental activities according to different stages of a product's life cycle.



Product Assessment

Omron's product assessment

Product assessment is intended to evaluate the environmental impact of products during the early planning/design stage. In manufacturing, we see a major shift from the conventional system of design, production, use and disposal. An inverse manufacturing system of the production process from recovery, dismantling, classification, reuse, then re-manufacturing will increase in importance. With this trend in mind, Omron links its product assessment activity to the company's current development system to create more easily recyclable products that save energy and are free from hazardous chemicals. We also evaluate the potential environmental impact of all new developments in four categories: (1) resource saving, (2) energy saving, (3) waste recycling, and (4) avoiding use of hazardous chemicals and parts, to develop products that are less harmful to the environment.



Life Cycle Assessment (LCA)

In fiscal 2000, Omron launched an LCA system while also preparing tools and training for LCA specialists. In fiscal 2001, LCA was conducted for seven major products.

●LCA

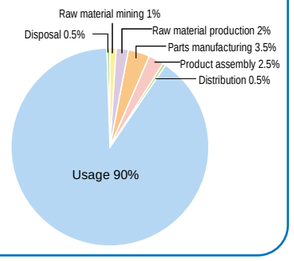
LCA is a methodology for identifying and quantifying resource/energy requirements and emissions for a product's entire life span (from materials procurement to manufacture, distribution, usage, recycling and disposal) while objectively and quantitatively evaluating its impact on the environment. This lets us identify the stages of a product's life with especially high environmental impact, allowing implementation of necessary measures for more efficient prevention of environmental harm.

LCA results for the H3CR-A8 solid-state timer

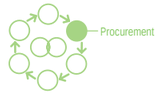
LCA for the H3CR-A8 solid-state timer revealed that the largest percentage (90%) of CO_2, a major factor causing global warming, is emitted during the usage stage. The reason is because this product is used on manufacturing lines over an extended time period. Accordingly, to reduce its environmental impact, product design should aim at consuming less energy (energy-saving design).

Structural part analysis showed that the casing materials have the greatest impact (33% of total CO_2 emissions). Thus, a more compact design that uses less molding material can contribute to lessening environmental impact (resource-saving design).

CO_2 emissions by stage of product life span



Green Procurement



Purchasing green parts and materials

Parts and materials play a significant role in the development and production of environmentally sound products. The cooperation of suppliers is as important in reducing environmental impact as our own commitment to environmental conservation. In 1999, Omron established its Green Procurement Guidelines. During fiscal 2001, Omron's green procurement standards that specify the items and criteria for evaluating our suppliers were distributed to 543 major suppliers (who account for over 95% of Omron's total purchasing cost) and a pre-evaluation was conducted.

In fiscal 2002, Omron will start an official supplier evaluation to prepare for the start in April 2003 of giving purchasing preference to suppliers rated high in terms of environmental conservation effort, in addition to such conventional criteria as quality, price and delivery schedule.

Evaluation items for Omron's green procurement

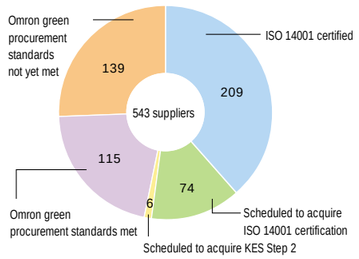
Environmental policy	① Establishment of an environmental policy
Observance of the law	② Control for strict observance of related environmental laws/regulations
Objectives and targets	③ Specifying environmental objectives and targets
Action plans	④ Identification of means for achieving environmental objectives and targets
Organizational system/responsibility	⑤ Establishment of a management-led organization system intended to promote environmental conservation ⑥ Appointment of personnel in charge of environmental management
Education/training	⑦ Education and promotion of environmental awareness among employees
Information disclosure	⑧ Communication of environmental activities and disclosure of related information
Environmental management/control	⑨ Control and evaluation of emissions in accordance with the Air Pollution Control Law ⑩ Control and evaluation of emissions in accordance with the Water Pollution Control Law (or Sewage Law) ⑪ Control and evaluation of noise and vibration levels ⑫ Control and reduction of CO_2 emissions (energy consumption) ⑬ Control and reduction of industrial waste ⑭ Control of chemical substances used (or purchased) ⑮ Resource conservation activities ⑯ Implementation of a product assessment system necessary to create environmentally friendly products ⑰ Reduction of environmental impact at the distribution stage
Contingency plan	⑱ Establishment of contingency plans for accidents and other emergency situations

Requirements of suppliers given purchasing preference

1. ISO 14001 certified or currently undergoing an ISO 14001 certification procedure by an authorized auditing body and scheduled for examination within a year.
2. Has acquired certification for a local government's original environmental management certification system (e.g., KES* Step 2), or examination by an authorized auditing body scheduled within a year.
3. If none of the above requirements are satisfied, Omron's own evaluation standards must be fully met.

* KES refers to Kyoto Environmental Management System Standards.

Supplier status in building an EMS



Purchasing green indirect materials

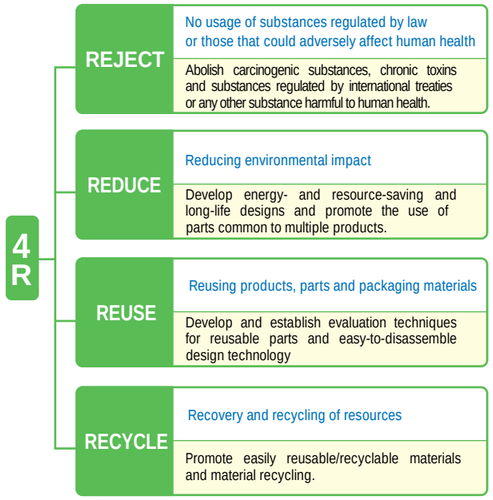
In addition to the procurement of green parts and materials for use in products, Omron is promoting the purchase of green indirect materials such as office supplies, PCs and copy paper. July 2001 saw the start of a green product purchase rate calculation for 10 offices and laboratories. As of the end of fiscal 2001, the green product procurement rate for indirect materials reached 74% on a value basis.

In April 2002, Omron also built a SLIM (Strategic Linkage for Intelligent procurement Management) system targeting indirect materials. In addition to its contribution to cost cutting, this system also helps monitor the green product purchase rate. Omron aims to put the SLIM system into operation at major Omron Group companies by June 2002, targeting cost reduction through centralized procurement and promoting green purchasing even further.

Technological Development

Omron's position on developing environmental technologies

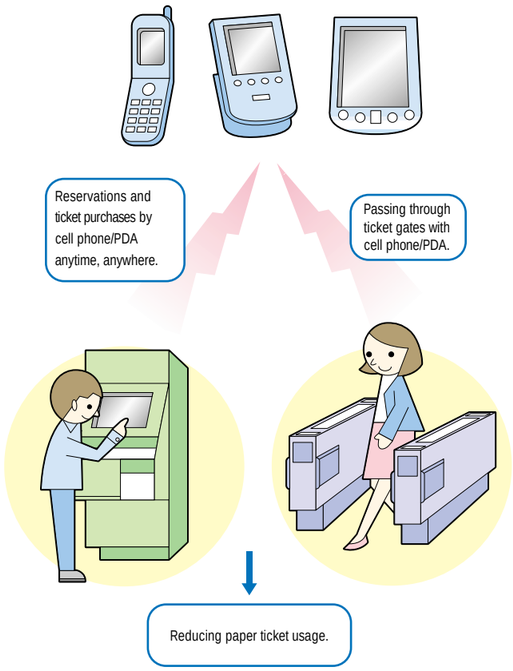
The "4Rs" (Reject, Reduce, Reuse and Recycle) are the starting point as Omron develops new technologies and refines the existing ones for environmental impact reduction. Omron's policy is to: (1) Reject: by eliminating carcinogenic substance use, chronic toxins, chemicals whose use is regulated by international treaties, and any other substance that can adversely affect human health. (2) Reduce: by reducing production's environmental impact through energy- and resource-saving, long-life product designs as well as increasing the use of parts common to multiple products. (3) Reuse: by establishing evaluation techniques and developing easy-to-disassemble designs to allow products, parts and packaging materials to withstand repeated use. (4) Recycle: by promoting resource recovery and recycling with easily recyclable materials and strengthening material recycling technology. Adhering to this policy allows Omron to help lessen the impact of our entire social system on the environment.



Examples of Omron eco-friendly products

● Digital Ticketing System

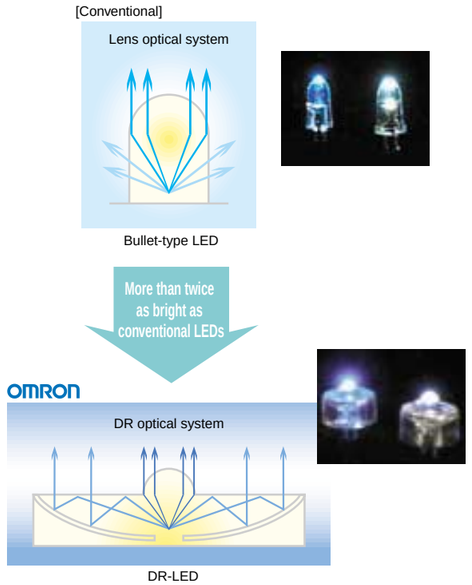
In 2000, Omron's digital ticketing system using mobile equipment was selected as a key IT business product by the Information Technology Promotion Agency, Japan (IPA), and Omron has begun system development to realize this technology. This mobile equipment will incorporate a train ticket function that allows a commuter to simply pass through automated ticket gates. Users will make reservations and purchase train, airline, concert and other event electronic tickets through the Internet anytime, anywhere. In addition to commuter train tickets, Omron's digital ticketing system has the potential for many other types of tickets, membership cards and cards for simple electronic fund transfer services. Paper ticket usage will be reduced significantly to conserve resources.



● Double Reflection LED
Twice as bright with less power

Omron's high-luminance DR (double reflection)-LED technology works with a proprietary optical system that takes all reflected light generated at the LED package interface, reflects it with an inner mirror and then emits it. Conventional LEDs scatter light inefficiently but the DR-LED directs all light forward in an intense, focused light beam that has twice the brightness of conventional LEDs. These LEDs with a world-class luminance level are produced in partnership with Stanley Electric Co., Ltd. by combining Omron's DR-LED technology with Stanley's heat dissipation and established production technology.

Potential applications for the new DR-LED are many and include automotive lighting and traffic signals. It will first see use for traffic signals, as substituting these LEDs for conventional lighting can reduce power consumption by 90%. The higher light efficiency allows fewer LEDs to achieve the same brightness level and results in significantly reducing energy and resources used.



Development of lead-free solder technology

The lead in solder and plating materials that is disposed of in landfills can cause serious groundwater pollution if disposed without treatment and exposed to acid rain. The use of lead is therefore increasingly prohibited in Europe. In November 1999, Omron began a corporate-wide project to reduce lead use in soldering and plating. During fiscal 2001, efforts were expended to develop lead-free soldering and plating processes and the technology for mass-production using these processes, as well as reliability evaluation standards and a fully established production system. Results proving the validity of lead-free soldering and plating technologies were confirmed for 42 products during fiscal 2001. There will be further studies conducted on soldering process efficiency, stability control for plating solutions, mounting of lead-free electronic components on printed circuit boards and on heat resistance improvements.

PLC using lead-free solder
Model C200HE-CPU11

Omron's lead-free technology

1. Lead-free solder materials

Solder formulas selected by Omron are Sn-Ag-Cu (tin-silver-copper), Sn-Cu (tin-copper) and other lead-free alloys containing minuscule amounts of other chemical elements that are added to the formulas. For use with low heat-resistant components and current facilities, more work will be conducted on developing low-temperature lead-free soldering technology.

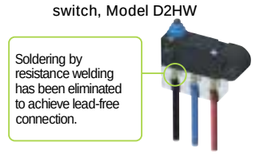
2. Soldering process

Lead-free soldering requires a melting temperature that is approximately 30°C higher than conventional tin-lead soldering. It was therefore important to use equipment that can minimize temperature variations during reflow/flow processes as well as special soldering irons for manual soldering. New process control standards and operational procedures also had to be established.

3. Lead-free plating

The ideal material for plating relay, switch and connector terminals was selected from Sn-Cu, pure Sn and Sn reflow materials to suit individual product functions and performance. Selection criteria included solder wettability, whisker resistance, long-term joint reliability, and heat resistance. Even then, maximum performance may not be obtained, as much depends on the plating solution and various parameters. Therefore, it is essential to establish parameter settings to ensure stable production. This may require more time before actually implementing lead-free plating, depending on the product.

Sealed-type miniaturized basic switch, Model D2HW



Eco-Products

In-house standards for Omron Eco-Products

In 1998, Omron introduced an Eco-Products Certification System that meets the requirements of the ISO 14021 Environmental Label Assertion by Self-Declaration standards. This system was reviewed and revised as follows:

Eco-Product certification criteria by fiscal 2001

A total of 72 products have been designated Eco-Products by meeting the following requirements:

- Reduction of 30% or more in energy consumption when compared to previous models.
- Reduction of 30% or more materials when compared to previous models.
- Products originally developed for contributing to environmental conservation.

Eco-Product evaluation criteria from fiscal 2002

Products that have been planned, designed and developed to minimize environmental impact throughout their entire life span.

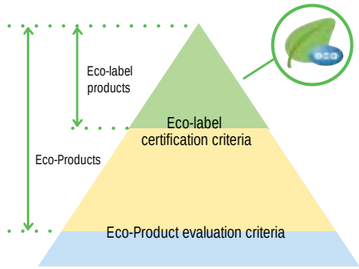
Eco-label product certification criteria from fiscal 2002

- Eco-Products also meet the certification criteria listed below. Recycling, reuse and non-use of environmentally polluting substances have also been added to the list of criteria for Eco-label certification.
- Formerly developed Eco-Products are also listed in the category of Eco-label products.

Eco-label certification criteria

	Environmental factor	Requirements	Calculation method
1	Power consumption during use or standby	30% reduction or more in energy consumption when compared to previous models	Power consumption ratio = (Conventional model power consumption − New model power consumption) / Conventional model power consumption
2	Use of main materials	30% reduction or more of main materials, in a way that provides customers with additional benefits	Material usage ratio = (Volume of materials used by conventional model − Volume of materials used by new model) / Volume of materials used by conventional model
3	Recycling	The industry's leading recycling rate	Recycling rate = Mass of plastics that contain 10% or more of recycled plastics / Total mass of plastics
4	Reuse	The industry's leading reuse rate	Reuse rate = Mass of parts recovered and reused from a collected product (including plastics and metal) / Mass of product
5	Products originally developed for contributing to environmental conservation (such as solar inverters), provided that the degree of contribution can be clearly demonstrated and quantified		
6	Non-use of environmental pollutants	Total elimination achieved while the product maintains a leading position	

Relationship between Eco-Products and Eco-label products



Relationship between Eco-Products and Eco-label products

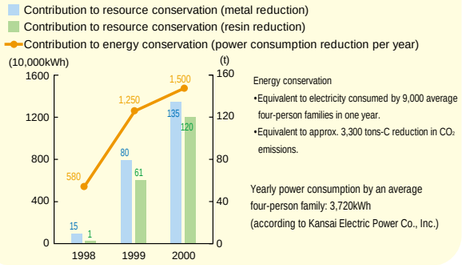
Omron Eco-label

ISO distinguishes three types of Eco-labels: Type I labels are awarded to products certified for environmental performance by a third-party (conformity assessment body) such as Japanese Eco-mark and German Blue Angel; Type II labels are self-selected, self-certified labels; and Type III labels depend on datasheets, etc. to provide environmental performance information. Omron's Eco-Products Certification System conforms to the Type II standard.

Estimated energy- and resource-saving effects of Eco-Products

Omron Eco-Products developed over the past three years (1998-2000) are anticipated to conserve 33.3 million kWh of energy (equivalent to the energy consumption of 9,000 average four-person families in one year). Use of metal was also cut by 230 tons and resins by 180 tons, contributing to resource conservation.

Energy and resin/metal material conservation achieved through Eco-Products (FY 1998-2000)

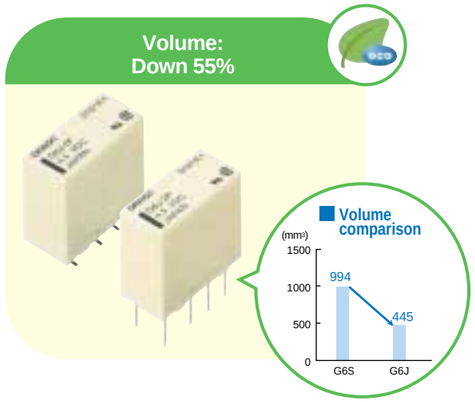


Industrial Products

Surface-mounted Relay Model G6J

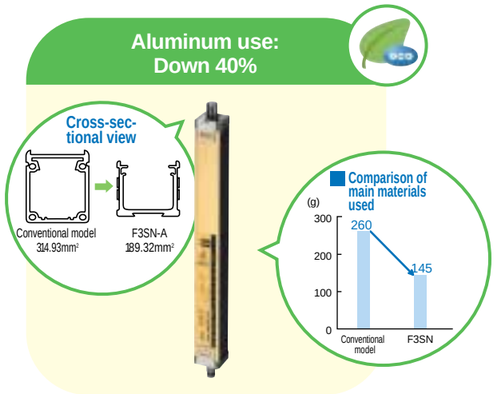
The G6J is a slim, miniaturized two-contact pole relay used in ADSL (Asymmetric Digital Subscriber Line) devices, data transmission equipment, measuring systems, modems and other information and telecommunications equipment. The extremely compact design (4.8(W) x 10.3(L) x 9(H)mm) allows high-density mounting in the world's smallest mounting area* — less than half of the previously used model G6S. It is also the first signal relay with a lead-free design. In addition, this single-coil latching type consumes a mere 100mW.

* The G6J-2P and G6JU-2P with PCB mounting terminals and the G6J-2FS and G6JU-2FS with surface-mounting short terminals have the smallest mounting areas of currently available two-contact pole (2C) telecommunications mechanical relays in the world (Omron survey of May 2001).



Safety Light Curtain Model F3SN

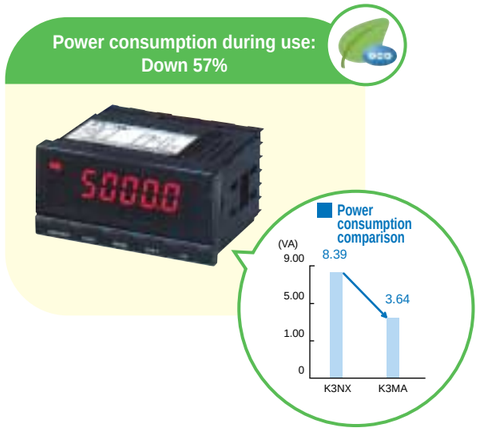
Safety sensors detect unauthorized personnel in hazardous areas of manufacturing lines and near industrial machinery to prevent occupational accidents. Safety light curtains have photoelectric sensors installed in light projection and receiving units (just like a curtain) to protect fingers, hands, and arms. When a light beam from the light projection unit is broken by a human body, the safety circuit switches off control output to stop machine tools and ensure operator safety. The F3SN incorporates comprehensive safety measures (self-diagnosis, fail-safe and qualification by a third-party auditor, etc.) to prevent machine-caused hazards. This product received the 2001 Good Design Award.



Digital Panel Meter Model K3MA

The digital panel meter interface unit has many applications in manufacturing machinery and monitoring equipment as well as display, measuring and alarm units used on inspection lines. The K3MA has not only reduced the number of LEDs used to cut costs and power consumption but has also raised display visibility. The 80mm depth of the unit conserves space and provides much layout flexibility for control board installation. Front key programming simplifies scaling* and reduces steps for setting procedures.

* Setting for converting input signal into an intended value for display.



Eco-Products

Industrial Products

Solar Power Conditioner Model KP40F

A solar power conditioner converts DC generated by solar cells into AC for domestic use and is also connected to an electric power company's power grid. When consumption exceeds what is generated, extra power is purchased from the power company. Any surplus power can be sold back to the power company and the system also serves as an emergency power supply during power failures. The KP40F is the smallest in its class, yet delivers superior performance. Featuring extended operation from sunrise to sunset, the KP40F's conversion efficiency is as high as 93.5%, making optimal use of solar power. This product was certified by the Japan Electrical Safety & Environment Technology Laboratories (certification number P-0056).

Conversion efficiency: 93%

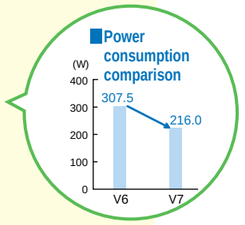
Public-use Products

Ticket Vending Machine V7, Model 3S2VT

Incorporating a Universal Design* concept, the Omron Vending Machine V7 was developed after many usability tests to prove effortless use by anyone including the aged and physically challenged. Its streamlined design incorporates smoothly rounded corners that can relieve stress users may feel in the congested ticket vending areas of many train stations. While its configuration is basically similar to the previous model (V6), the V7 has a larger LCD and easier-to-see buttons that make it more user-friendly.

* Originally advocated by Ronald Mace of North Carolina State University in 1990, Universal Design is a worldwide movement based on the concept that all products, architecture and environments should be designed to consider the needs of the widest possible array of users.

Power consumption in standby: Down 30%



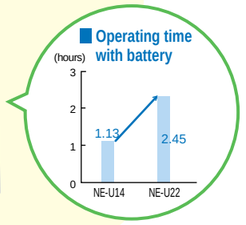
Healthcare Equipment

Nebulizer Model NE-U22

Nebulizers are used for inhalation treatment by patients suffering from asthma and chronic lung disease induced by air pollution, and also protect the respiratory tract from post-surgery infection. Omron's NE-U22 measures just 38(W) x 104(H) x 51 (D)mm and weighs 97g — the smallest and lightest nebulizer in the world. Compared to the former NE-U14, the NE-U22 has reduced mass by 1/3 and the volume by half. With its doubled battery life and pocket size, the unit is easier for children and the aged. The NE-U22's high-efficiency design cuts power consumption down to half that of a conventional unit (AA batteries x 2).

Usable time per battery: Double

World's smallest
World's lightest



Comments from Omron Eco-Product Users and Sales Personnel

The following are comments from customers and Omron sales personnel regarding Omron Eco-Products.

Energy- and resource-saving bank note stacker/dispenser

Kiyoshi Fujii
Product Planning
General Manager
Laurel Bank Machines Co., Ltd.

Hiroshi Matsumura
Sales Support Manager
Sales Planning Division
Laurel Bank Machines Co., Ltd.

Our company is engaged in the development, manufacture, marketing and maintenance of various paper bill processing machines and systems and online banking terminals. Bank note stacker/dispenser units are used at bank counters and are essential for banking operations. Supplied by Omron on an OEM (Original Equipment Manufacturing) basis, paper note stackers/dispensers are used in combination with coin stackers/dispensers, coin sorters and other related machines to help enhance bank teller efficiency. The large-capacity TTM-IVn stores 2,000 bills in each of four bill category-specific cartridges and 500 bills in a recovery cartridge. It can also process four different types of bills in a circulating manner. Moreover, the TTM-IVn incorporates full environmental considerations by consuming 39% less power during use and 49% less power in standby. Its width has been reduced from 400mm to 340mm and weight from 185kg to 130kg. This product is also highly appraised for its quality. To respond to increasingly exacting demands for eco-friendliness, we have recently established a corporate-wide project to work on reducing CO_2 emissions and the use of harmful chemicals.

Circulating-type bank note stacker/dispenser TTM-IVn

Power sensor contributing to energy conservation

Kaho Nakamura
Industrial Devices and Components Group
Sales & Marketing Division HQ
Industrial Automation Company
Omron Corporation

Used together with inverters, dispersed power generators and other energy-saving devices, the pulse output-type power sensor measures power consumption for each piece of manufacturing equipment. Its consistent monitoring capability allows more precise and thorough energy management. Omron's KM20 can simultaneously keep track of the amount of power consumed by each machine and the volume of production on automobile production lines for the management of power consumption-to-unit production ratio. Its compact size takes up less installation space and it is easy to attach to existing equipment. This makes it possible to check and compare power consumption data against the unit operation rate, making the KM20 a motivational tool for promoting employee energy-saving. In fact, one electronic component factory once achieved a 50% improvement in power usage efficiency with the aid of the KM20. This unit is also employed for lighting and air conditioner control for each floor.

Compact power sensor KM20

Environmentally sound nebulizer

Fumio Nakazawa
Medical Equipment Sales Department
General Manager
Healthcare Company
Omron Corporation

Omron has an extended line of nebulizers from home use units to medical institution use. The brand new NE-U22 developed in January 2002 is a true breakthrough. Compared to the former model (NE-U14), the NE-U22 is 50% more energy efficient and conserves 50% more resources in terms of volume. It is CFC-free as well, boosting greater environmental friendliness. The NE-U22 has been favorably accepted by users for its easy-to-carry, compact, lightweight design. Its quiet operation does not frighten children, and it uses medicine efficiently. We are aiming for further improvements such as easier use for bedridden patients, simple disinfection and care, and lower costs. Presently, nearly 2% of the world metered dose inhaler (MDI) market has been replaced by nebulizers. By developing more innovative and eco-friendly products and reducing costs, we intend to expand the nebulizer market even further.

Nebulizer NE-U22

Eco-Factory

Manufacturing

Concept of eco-factory

To encourage a complete shift from high-volume production, consumption and discarding to a recycling-oriented, closed-loop society, Omron is dedicated to reducing the potential environmental impact of all business activities. We try to manufacture products using less resources and energy and hold the amount of waste and emissions to an absolute minimum. Accordingly, Omron factories are actively involved in suppressing gaseous, liquid and solid emissions that are harmful to the global environment and converting emissions into things of value. Other activities in progress are procurement of energy- and resource-saving, environmentally sound parts and materials, waste reduction and recycling, as well as regulated use of hazardous chemicals and use of alternative materials. Ecological considerations are maintained throughout the entire manufacturing process from procurement of parts and materials to final disposal.

Main activities of eco-factory

Energy conservation

One of the most critical environmental issues, global warming, is caused by escalating emissions of greenhouse gases, mainly carbon dioxide. Omron is working to boost efficiency of energy usage to achieve its long-term CO_2 reduction target.

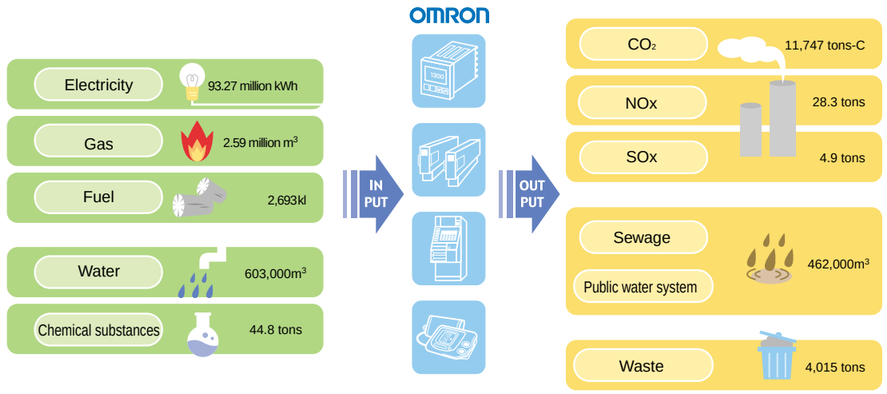
Promotion of waste reduction and recycling

At Omron, effectively coping with dioxin issues is as important an environmental objective as reduction of waste. Accordingly, a corporate-wide goal of minimizing the final disposal of waste through incineration and landfill has been specified. We aim to achieve zero emissions throughout the Omron Group's domestic production sites as quickly as possible.

Control of hazardous chemical substances

Concern about the adverse effects of chemical substances on human health and the ecological system is increasing. Conforming to various related laws and regulations, Omron has classified chemicals subject to in-house regulation into three categories — prohibition, reduction and management. In accordance with the PRTR Law, Omron also conducts surveys and provides control regarding the usage, release and transfer of chemical substances.

Environmental load mass balance for Omron domestic production sites



Energy Conservation

Manufacturing

Omron's commitment to preventing global warming

In 1992, the United Nations Framework Convention on Climate Change was established and at its third session, held in Kyoto in 1997, Japan agreed to reduce average greenhouse gas emissions between 2008 and 2012 by 6% on average (CO_2 equivalent) when compared to the 1990 level. Omron is following this target and is working to cut the use of electricity, gas, petroleum and other energy sources. Main activities conducted during fiscal 2001 are listed on the right. For fiscal 2002, Omron aims to measure energy consumption for each manufacturing line and its equipment and implement actions based on obtained data.

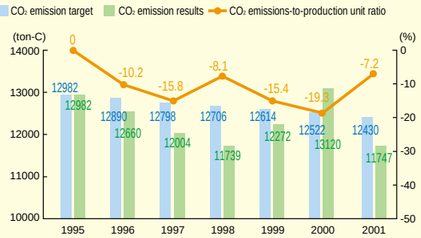
Main activities conducted during fiscal 2001

- High-efficiency inverter-controlled lighting employed.
- Inverter control employed for cold water secondary pump of air conditioning systems.
- Inverter control used for cold water circulation pumps of cooling towers.
- Heat-insulation coating applied to windows.
- Air conditioners upgraded to energy-saving type units.
- Ventilation system adopted for compressor rooms/temperature testing rooms.
- Countermeasures for air leakage implemented.
- Power monitors installed for thorough data analysis.

Fluctuations in CO_2 emissions

At Omron, each year's target for CO_2 emissions reduction is set toward the eventual goal of reducing total CO_2 emissions by 11% by the end of fiscal 2010 (when compared to fiscal 1995). The company easily met its targets for fiscal 2001: it reduced emissions by 9.5% from fiscal 1995 levels to 11,747 tons-C, as opposed to the targeted 4.3% reduction to 12,430 tons-C. The CO_2 emissions-to-unit production ratio, however, increased nearly 10% from the previous year's level due mainly to a large decrease in sales. The main factor that worsened the CO_2 emissions-to-production ratio was a fixed segment of energy consumption that does not decrease even when production volume decreases. In the future, Omron aims to address this fixed segment for further improvements in environmental performance.

Total CO_2 emissions and emissions-to-production ratios from Omron factories in Japan



Note: Calculation method
1. The national average power receiving end coefficient value for each year, reported by the Federation of Electric Power Companies, was used as the CO_2 conversion coefficient. Fiscal 2001 results may vary depending on the determined coefficient value.
2. A reduction in CO_2 emissions through the use of co-generation systems was determined by comparing energy consumption of co-generation systems and thermal power systems.

In addition to the above, CO_2 emissions from 10 offices and laboratories totaled 2,800 tons-C during fiscal 2001.

Examples of energy-saving activities

Energy conservation and improvement of working environment at environmental testing laboratory

The Kusatsu Factory environmental testing laboratory consistently operated an air conditioner since the room is filled with waste heat from the regulated temperature tank. Based on an employee suggestion, six window fans were installed which reduced the use of the air conditioner. This measure has resulted in a reduction of power consumption by 25,600kWh per year.

Six window fans force waste heat out of the room without using an air conditioner, contributing to a reduction of power consumption.

Energy-saving by changing the machine room door

Omron Kumamoto uses two compressors to operate manufacturing equipment. As the machine room was hermetically sealed, negative pressure was generated, causing an imbalance between the compressor's air intake and exhaust. Aware of this, the door was changed from the hermetic seal type to a louver type to keep the interior pressure at a constant level. Compressor efficiency improved, terminating the need for one compressor unit. The result is an annual reduction of 198,720kWh in power consumption.

New louver door for machine room

Waste Reduction

Reduction of industrial waste

Omron treats waste as a major source of pollution and a substantial loss for the company. To reduce the volume of waste, Omron promotes reuse and in-line recycling, while also concentrating on the improvement of productivity and yield as well as promoting the use of common parts and materials for different products.

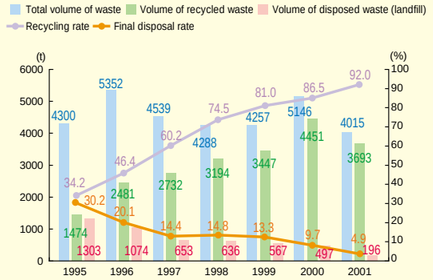
Zero emissions

Besides recycling, Omron aims to transfer waste in raw materials, design and production to make it more easily reusable. As such, Omron production sites are individually working to achieve 100% recycling/reuse of waste by totally eliminating incineration or landfill disposal.

Waste volume and recycling rate fluctuations

During fiscal 2001, Omron achieved a recycling rate of 92.0% and a final disposal rate of 4.9%, far better than its initial recycling rate target of 87.5% minimum, and a final disposal rate target of 9.5% maximum. With these accomplishments, Omron has already met the targets set for fiscal 2005. Omron Iida also became the second Omron Group site after the Mishima Factory to achieve zero emissions. Nine domestic manufacturing sites are also on course to realize zero emissions by March 31, 2003. Omron will strengthen zero emissions efforts even further by moving the initially intended group-wide attainment schedule of fiscal 2010 up to fiscal 2005.

Fluctuations in waste volume from Omron manufacturing sites in Japan



In addition to the above, 10 offices and laboratories generated a total of 352 tons of waste during fiscal 2001.

Recycling of molding plastic materials — establishment of re-pelleting technology

Omron's Electronic Components Company (ECB) produces various electronic components such as relays, switches and connectors. In the plastics molding process, a large amount of runners (plastic strips) are emitted along with molded components. Formerly, emitted runners were broken down to recyclable pieces with a crusher and mixed with unused materials. For small components, however, most runners were disposed of due to insufficient molding stability. As a solution, ECB has developed a re-pelleting technology that processes waste plastics into pellets for easier recycling. As this process is exposed to more heat, quality became a problem. By improving the re-pelleting system and optimizing molding parameters, Omron is now able to achieve quality equivalent to new plastics. Currently, Omron Kumamoto uses this technology for the highest-cost grade, heat-resistant plastics. This totally eliminates waste plastics that formerly amounted to 20 tons per year. ECB is striving to achieve 100% recycling of waste plastics by expanding the use of re-pelleting technology.

Rie Hirose
in charge of developing re-pelleting technology, ECB Engineering Center

Topics

Kyoto Office makes compost from leftover food

The dining room at the Omron Kyoto Office serves food to as many as 600 employees every day. Pre-cooked foods are brought by an Omron catering service subsidiary to the dining room, where it is heated or processed before being served. No raw kitchen refuse is generated but leftovers amount to nearly 50kg a day. To reduce waste, a biodegrading waste disposer is used for the production of compost (organic fertilizer), which is then supplied to a subcontracted tea farm. The Kyoto Office in turn purchases high-quality tea produced by the farm to help promote recycling of resources.

Tea farm in Uji, Kyoto Pref.

Case Report

Kusatsu Factory

With a staff of 1,500, the Kusatsu Factory is the largest Omron Group production facility in Japan. Situated near Lake Biwa, the factory develops and manufactures a wide range of products from ATMs and ticket gates to relays and other control components. Shiga Prefecture, the home of the Kusatsu Factory, has stricter environmental regulations than other prefectures, and the factory is located close to a residential area. Its activities concentrate on reducing environmental impact and enhancing safety.

Masao Hirauchi
in charge of promoting environmental conservation activities

Kusatsu Factory

ISO 14001 reassessment

As three years had passed since the first acquisition of ISO 14001 certification, the Kusatsu Factory underwent reassessment in January 2002. In the early stages, three internal companies cooperated to meet corporate-wide goals of promoting energy conservation and waste reduction. Since 1999 each business unit has set its own specific goals in lessening environmental impact. Presently, 69 ongoing projects include the development of Eco-Products, promotion of product assessment and expansion of recycling activities.

Employment of a co-generation system

As part of its energy-saving measures, the Kusatsu Factory introduced a gas co-generation system in 1997 to recover waste heat for temperature control. During fiscal 2001, the factory renewed equipment based on the ESCO diagnosis, installed 5,600 inverter fluorescent lights and implemented inverter control for secondary pumps for hot and cold water. Consequently, power consumption declined 6%.

Achieving 99% recycling rate

Waste treatment is one of the key environmental objectives for the Kusatsu Factory. During fiscal 2001, it reduced the total volume of waste to 995 tons from 1,535 tons generated during the previous year. Strict sorting of used paper and waste plastics helped raise the recycling rate from the fiscal 1998 level of 60% to 99%.

Ticket gate manufacturing line

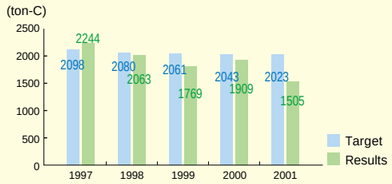
Gas co-generation controlled at Energy Center

Considerations for local community

As the Kusatsu Factory's production process uses lubricants and chemical substances, complete risk control measures are taken. For example, a kit is provided at each section to minimize environmental hazards in case of leakage. Employee training is also conducted yearly to assure appropriate handling of chemical substances. Drains carrying rain and wastewater from our plants are equipped with locks to prevent oil from escaping the factory in case it enters the drains, and there is an oil leak pit around the oil feed of our gas-fueled generators to prevent spills and spread of oil. As for air pollution prevention, a medium/long-term action plan was drafted according to prefectural legislation and submitted to the prefectural government.

The Kusatsu Factory also recycles disposed ATMs (page 23) and produces compost from food leftovers using a biodegrading waste processor. The factory's environmental conservation activities are introduced in its quarterly in-house publication "Eco News" to enhance employee awareness of ecology. The Kusatsu Factory will continue integrating employee efforts and strive to lessen environmental harm.

Fluctuation in CO_2 emissions



Fluctuation in waste volume

Control of Chemical Substances

Manufacturing

Omron's efforts to reduce harmful chemicals

Conforming to related laws and regulations and in view of industrial trends, Omron has established in-house regulations for harmful chemicals. These regulations are also incorporated into in-house guidelines for product development so as to strictly control the use of harmful substances. The company has discontinued the use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), asbestos and specified bromine-based nonflammable materials. Our efforts are also concentrated on reducing the amount of lead, cadmium and hexavalent chromium.

Omron totally abolished CFCs in 1994, HCFCs in 1995 and other organochlorine solvents in 1998.

In fiscal 2001, a chemicals database was built for parts and raw materials to be purchased to reduce the volume of harmful substances in products. This system was put into operation in fiscal 2002.

Specifications of chemicals subject to regulated use

Omron has specified the following in-house regulations for the use of chemicals.

Category	Definition	Action
Substances prohibited (category A)	119 chemical categories prohibited by laws and regulations both in and outside Japan	Usage to be terminated
Substances subject to future prohibition (category B)	5 chemical categories currently in use but expected to be prohibited in five years	Use allowed until related laws and regulations are put into effect (alternative materials to be studied/developed)
Substances subject to voluntary regulations (category C)	123 chemical categories, use of which is allowed but whose environmental impact is noted	Reduction and switch to alternative materials to be promoted voluntarily wherever technically and financially possible, according to specified priorities

Pollutant Release and Transfer Register (PRTR)

In April 2001, the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) was enacted. It then became mandatory to report data regarding the usage, release and transfer of chemical substances. Omron conducted PRTR surveys on the specified 354 chemical substances and reported seven substance categories with the amount handled per year at each site totaling to 0.1 tons or more (see table below). There were no chemical substances with more than five tons handled per year, the reporting of which is required by the PRTR Law. We aim to strengthen our in-house control system to accelerate regulation and reduce the usage of chemical substances.

Substance name	Amount used	Amount released to the environment	Amount transferred as industrial waste	Amount consumed	Amount removed and treated	Amount recycled
Antimony and antimony compound*	1.36	0.00	0.01	1.30	0.00	0.05
Bisphenol A epoxy resin (liquid)	8.25	0.00	0.50	7.75	0.00	0.00
Xylene	1.19	0.05	0.00	0.00	0.00	1.14
Toluene	2.60	1.63	0.13	0.82	0.00	0.02
Lead and lead compound*	28.39	0.02	0.06	17.06	0.00	11.25
Nickel	0.10	0.00	0.00	0.00	0.00	0.10
Hydrogen fluoride and its water-soluble salts*	2.83	0.13	0.34	0.00	0.00	2.36
Total	44.72	1.83	1.04	26.93	0.00	14.92

(Unit: ton)

* Compound amount calculated by conversion into metal.

PRTR
(Pollutant Release and Transfer Register)
This system collects and reports data concerning the release and transfer of chemical substances suspected of causing environmental pollution.

Status of temporary PCB storage

The PCB Waste Disposal Special Measures Law was enacted in July 2001, making it mandatory to report the storage and disposition status of polychlorinated biphenyl (PCB) waste to the respective municipality. Omron provides strict control over the storage of end-of-life electronic equipment (transformers, capacitors, stabilizers, etc.) containing PCBs in order to prevent PCB leakage. Also, according to the law, each site reports its storage status to the relevant governmental body. We are considering the implementation of specific measures for PCB disposition once suitable processing methods and technology are fully established.

Storage warehouse for end-of-life equipment containing PCBs (shutter up).

Storage of high-voltage capacitors

Warehouse is surrounded by concrete walls to prevent PCBs from leaking out from the storage space.

Environmental Risk Management

Manufacturing

Concept of environmental risk management

To prevent leakage of harmful chemicals that may contaminate water or cause other environmental pollution, Omron adopts in-house regulations for the management of such chemicals which are even stricter than related laws and regulations. A manual to handle emergency situations has also been made available, and training sessions are held for concerned personnel to heighten awareness so that environmental risk can be minimized.

Chemical substances such as organic solvents are stored in a locked warehouse with partitions to prevent substance bottles from falling.

Gate for water channel connected to the outside to prevent harmful chemical substances from leaking out in case of an accident.

Annual training is held to minimize the risk of harmful substance leakage.

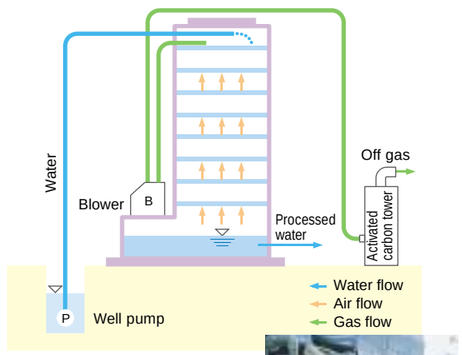
Kit for handling chemical leakage at each section.

Drills organized four to six times a year to minimize hazard even if gas leak occurs in semiconductor production clean room.

Preservation of soil and groundwater

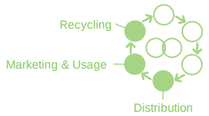
Omron's voluntary soil and groundwater surveys identified pollution sources (volatile organochlorine compounds) that exceeded environmental standard values at two sites: the former grounds of our Shijo Factory and our affiliate, Omron Sanyo. These findings were immediately reported to the respective municipal governments in December 2000. As a remedy, appropriate cleanup measures are now being implemented in accordance with the guidelines specified by the Ministry of the Environment. Two different cleanup techniques have been combined: a groundwater pumping method designed to pump up polluted water and purify it using activated carbon; and a high-vacuum extraction method based on vacuum adsorption of soil contaminants. As a result, recovery of contaminants is progressing steadily. Omron also conducts pilot tests for innovative cleanup technology to complete the cleanup and restoration process at the earliest date possible.

Multi-level tower volatilization system



Activated carbon tank
Organochlorine compound in a gaseous state processed by the multi-level tower volatilization system is adsorbed by activated carbon. The resulting clean gas is released into the atmosphere.

Logistics and Recycling



Distribution

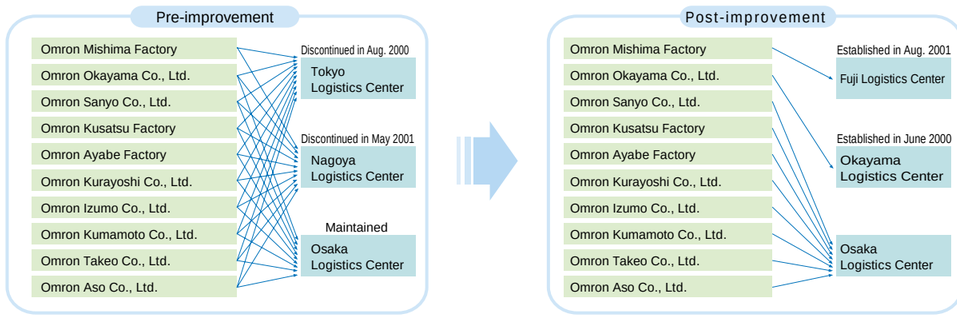
Restructuring the logistics system

Omron plans to implement a corporate-wide reform initiative for its supply chain management (SCM) system involving overseas sites as well by March 2005. As a first step, Omron logistics centers in Japan were reorganized. Formerly, products were transported from ten factories throughout Japan to logistics centers in Tokyo, Nagoya and Osaka where they were kept in stock. Each center held stocks of over 10,000 products to accommodate orders from distributors. Recent restructuring was intended to reallocate and integrate stocks under the concept of 'one stock point for one product.' As a result, the total transportation distance from factories to logistics centers has been cut by two-thirds, saving distribution costs of 300 million yen per year. Inventories have also been reduced by 20% (worth 600 million yen) by eliminating redundancies. At present, 0.5-month inventories are kept at each logistics center, maintaining a delivery schedule conformity of over 99%.

For the environment, CO_2 emission reduction of 798 tons per year is estimated due to the shortened transportation distance, improved efficiency and a partial modal shift (a switch to a more efficient distribution system). We will continue restructuring our SCM system on a global level, including the shift of manufacturing operations to overseas countries, in order to reduce inventories and logistic costs and lessen the environmental impact of the distribution stage.

Reduction in the number of trucks used

Kyushu →	Osaka	One 10-ton truck eliminated
Kyushu →	Nagoya	Replacing one 10-ton truck with a 5-ton railroad container
Osaka →	Tokyo	One 10-ton truck eliminated



Recycling

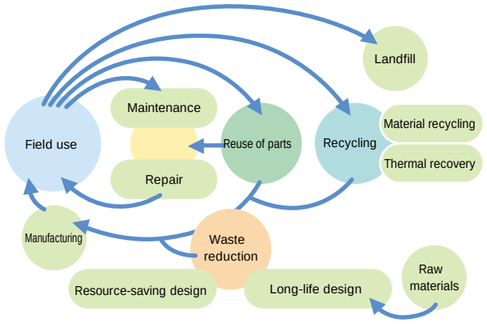
Recycling of end-of-life ATMs

In January 2001, Omron launched a recycling test for disposed ATMs to promote recycling of materials and reuse of parts through collection, manual disassembly and sorting of materials used. Approximately 300 tons of used ATMs have been recycled, achieving a recycling rate of over 98% by weight. The collected equipment is disassembled through a manual process, resulting in a more exact sorting of materials to assure greater quality of end products. As some collected ATMs incorporate relatively new module components we are studying the possibility of reusing them as service parts. Omron aims to incorporate data and suggestions obtained through disassembly operations to develop products that are easier to disassemble and recycle.

Strict classification of materials through manual disassembly

End-of-life ATMs collected

■ Life cycle of banking systems



Overseas Activities

Individual activities of overseas manufacturing sites are introduced at http://www.omron.com/about_omron/.

Omron Group companies outside Japan are also actively involved in reducing the environmental impact of business activities. In 1996, Omron Manufacturing of the Netherlands B.V., a Dutch manufacturing subsidiary, became the first overseas site to receive ISO 14001 certification, with other facilities steadily following. All overseas manufacturing sites achieved ISO 14001 certification by August 2000.

In this page, environmental data for a site representing each area is introduced, along with volunteer activities performed at overseas sites.

Area	Power consumption (10,000kWh)	Water used (10,000m3)	Recycling rate (%)
China (5 sites)	1,208	12.0	57.2
Asia-Pacific (4 sites)	3,064	17.9	68.0
North America (3 sites)	1,542	1.7	61.3
Europe (3 sites)	221	0.4	62.7
Overseas total	6,035	32.0	62.3

●China

Omron Dalian Co., Ltd. (China)

- Business lines: Manufacture and marketing of healthcare equipment
- No. of employees: 1,525

Environmental data		
Energy consumption	Electricity	2,800,000kWh
	Gas	80,000m³
Waste	Total amount of waste	640t
	Amount recycled	385t
	Recycling rate	60.2%
Water used	67,000m³	

●Asia-Pacific

PT Omron Manufacturing of Indonesia (Indonesia)

- Business lines: Manufacture of control components
- No. of employees: 1,775

Environmental data		
Energy consumption	Electricity	7,880,000kWh
	Oil	1,728kl
Waste	Total amount of waste	30t
	Amount recycled	30t
	Recycling rate	100%
Water used	62,000m³	

●North America

Omron Manufacturing of America, Inc. (U.S.A.)

- Business lines: Manufacture of PLCs, sensors, switches and automotive components
- No. of employees: 51

Environmental data		
Energy consumption	Electricity	3,660,000kWh
	Gas	100,000m³
Waste	Total amount of waste	47t
	Amount recycled	35t
	Recycling rate	74.5%
Water used	2,000m³	

●Europe

Omron Manufacturing of the Netherlands B.V. (The Netherlands)

- Business lines: Manufacture of temperature controllers and FA components
- No. of employees: 200

Environmental data		
Energy consumption	Electricity	1,400,000kWh
	Gas	90,000m³
	Oil	2,600kl
Waste	Total amount of waste	86t
	Amount recycled	46t
	Recycling rate	53.5%
Water used	2,000m³	

Overseas volunteer activities

Malaysia

Omron Electronics and Omron Business Systems teams did charity work for a disabled children's association in Klang Selangor. The companies and employees also donated an RM3800 as a 'gift-in-kind.'

Brazil

On Omron Day, a visit was made to an NPO devoted to the care and rehabilitation of the physically/mentally disabled located near the Omron Eletrônica do Brasil (OEB) office. OEB volunteers entertained patients with a variety of enjoyable activities.

U.S.A.

For Omron Day at Omron Electronics LLC Schaumburg, Il., 109 employees participated. Employees could choose from a range of volunteer opportunities including working at a food bank, donating blood or working at a local forest preserve.

U.K.

A team from Omron Europe UK visited a nearby nursery school to repair the play area. An old shed was painted with an attractive picture. The garden was also completely transformed with a brightly colored fence and brand new picnic tables and benches.

The Netherlands

Omron Manufacturing of the Netherlands B.V. (OMN) supports a leukemia prevention organization. To help raise funds, OMN skating club members joined in a skating tour organized by the father of a boy suffering from leukemia.

Environmental Management

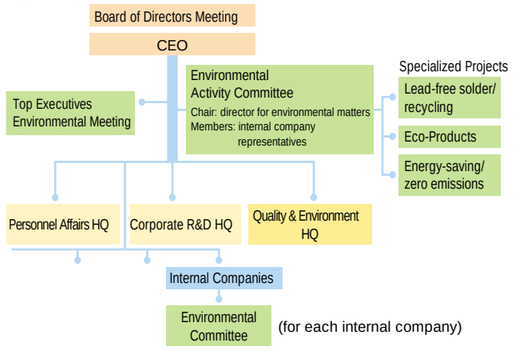
Environmental conservation promotion system

Omron believes that to effectively address environmental issues, management and employee efforts must be totally integrated and cooperation with suppliers and partners must be sought. Based on this belief, Omron has built a corporate-wide system to promote environmental conservation. Responsible for coordinating corporate-wide environmental strategies with those of each internal company, the Environmental Activity Committee consists of members representing each internal company and is chaired by the director responsible for environmental matters. Each business unit is also working diligently toward meeting individually set quantitative targets, while clearly identifying its own environmental issues.

Environmental strategy drafting/ promotion organization

Reflecting the top executive decisions, the Environmental Activity Committee reviews, decides on and promotes the major environmental projects to be addressed.

Organization



Environmental audit system

There are two facets to Omron's environmental audit system for each site: self-auditing and corporate-wide auditing. This system is intended to monitor whether environmental policy is followed correctly in the implementation of an environmental management system. At Omron, environmental auditing is considered an important task for effectively investing corporate resources in environmental performance improvements and for identifying major issues.

Self-auditing covers checks for EMS implementation and the level of environmental objective and target attainment. When objectives and targets are not met, the reasons are identified, plus these audits confirm observance of related laws and in-house regulations. As for corporate-wide audits, we are going to strengthen the auditing system to put greater emphasis on improving environmental performance and prevent and reduce environmental risks.

Acquisition of ISO 14001 certification

Acquisition of ISO 14001 certification is an absolute must for the company, and Omron in September 1995 established a policy to acquire ISO 14001 certification as early as possible. All major Omron Group sites (18 in Japan and 15 overseas) have already received ISO 14001 certification. With multi-site acquisition of ISO 14001 for its laboratories, offices and sales bases at the close of fiscal 2000, followed by additional certification for the Kyoto-Ekimae Office in March 2002, all domestic R&D facilities and major offices have acquired ISO 14001 certification. In order to accelerate the reduction of environmental burdens in all regions where Omron is active, the group is beginning efforts to bring ISO 14001 certification to major bases where our goods are distributed.

ISO 14001-certified Omron Group sites

[Japan] Manufacturing: 18 sites, R&D: 4 sites, Offices: 6 sites; [Overseas] Manufacturing: 15 sites; Total: 43 sites — As of April 2002

Japan/ overseas	Category	Site	Auditing body	Date of certification
Japan	Omron Corporation	Ayabe Factory	BVQI	1996/11/16
		Mishima Factory	BVQI	1997/9/15
		Kusatsu Factory	BVQI	1998/12/25
		Minakuchi Factory	BVQI	1997/6/12
		Offices & Labs (10 sites*)	BVQI	2001/4/3
	Affiliate	Omron Iida Co., Ltd.	JQA	1998/10/2
		Omron Ichinomiya Co., Ltd.	BVQI	1996/12/8
		Omron Takeo Co., Ltd.	JACO	1998/2/23
		Omron Nohgata Co., Ltd.	BVQI	1997/7/26
		Omron Sanyo Co., Ltd.	JQA	1999/1/8
		Omron Matsuzaka Co.,Ltd.	BVQI	1998/2/21
		Omron Okayama Co. Ltd.	BVQI	1997/8/2
		Omron Izumo Co., Ltd.	JACO	1998/1/26
		Omron Aso Co., Ltd.	BVQI	1997/9/15
		Omron Kurayoshi Co., Ltd.	JACO	1997/9/29
		Omron Kumamoto Co., Ltd.	JACO	1997/8/26
		Omron Kyoto Taiyo Co., Ltd.	BVQI	1998/3/31
		Omron Taiyo Co., Ltd.	BVQI	2000/9/30
		Omron Nomura Matsuno Co., Ltd.	BVQI	2001/10/10
Overseas	Shanghai	Shanghai OMRON Automation System Co., Ltd.	SCEMS	1998/11/27
	Shanghai	OMRON (Shanghai) Co., Ltd.	SCEMS	1998/12/8
	Shanghai	Shanghai OMRON Control Components. Co., Ltd.	EIQA	1999/2/5
	Dalian	OMRON (Dalian) Co., Ltd.	CCEMS	1998/12/14
	Taiwan	OTE Engineering Inc.	SGS	1999/2/10
	Korea	OMRON Automotive Electronics Korea Co., Ltd.	KMA-QA	1999/3/26
	Malaysia	OMRON Malaysia Sdn. Bhd.	SIRIM	1998/12/18
	Indonesia	PT OMRON Manufacturing of Indonesia	BVQI	1997/8/26
	The Philippines	OMRON Mechatronics of the Philippines Corporation	BVQI	2000/8/9
	Germany	OMRON Electronics Manufacturing of Germany G.m.b.H.	LRQA	1999/4/16
	The Netherlands	OMRON Manufacturing of The Netherlands B.V.	LRQA	1996/11/28
	UK	OMRON Electronic Components Ltd.	BSI	1998/2/9
	U.S.A.	OMRON Automotive Electronics, Inc.	SGS	1999/3/31
	U.S.A.	OMRON Manufacturing of America. Inc.	TUV	1999/5/6
	Canada	OMRON Dualtec Automotive Electronics, Inc.	SGS	1999/4/23

* Multi-site acquisition of ISO 14001 certification for Kyoto Office, Tokyo Office, Osaki Office, Nagoya Office, Komaki AEC Office, Osaka Office, Kyoto-Ekimae Office, Kyoto Laboratory, Tsukuba Laboratory and Kumamoto Laboratory.

Auditor checking the control status for chemical substance storage area.

Industrial waste dump area being inspected.

Environmental accounting

Environmental accounting is intended to monitor and survey the costs (investments and expenses) associated with environmental activities and resulting benefits. It serves as an important tool to support management decision-making and the disclosure of environmental information. During fiscal 2000, one internal company carried out a trial run of environmental accounting, followed by corporate-wide implementation in fiscal 2001. During fiscal 2001, environmental accounting data was collected from 15 sites in Japan and compiled according to "A Guideline for Developing an Environmental Accounting System" (2000 Report) (see below). Environmental costs (investments and expenses) amounted to 1.2 billion yen with environmental benefits totaling 170 million yen. Return on investment was 14%.

For contributions to business, the percentage of Eco-Product sales against total new product sales was calculated at 17%. For the future, Omron plans to expand the scope of this practice to cover administrative, sales and R&D sectors as well as overseas facilities. Establishment and implementation of appropriate indicators for evaluation are also being sought to further promote environmental accounting.

Environmental costs

Unit: millions of yen

Category	Definition	Investment + expenses
Costs within business areas	Pollution prevention costs (Costs incurred for activities intended to reduce and prevent air pollution, water pollution and soil contamination)	250.2
	Global environmental conservation costs (Costs incurred for activities intended to reduce and prevent global warming emissions and ozone depletion substances and for energy conservation activities)	234.0
	Resource circulation costs (Costs incurred for activities to conserve resources and reduce waste)	279.0
Upstream/ downstream costs	Costs incurred for reducing environmental impact before and after the production/service stage (collection of used products, recycling, etc.)	0.6
Environmental management costs	Costs incurred for environmental management activities (building and maintaining EMS, environmental education for employees, etc.)	378.2
Environmental R&D costs	Costs incurred for R&D activities to reduce environmental impact	30.2
Social activity costs	Costs incurred for social contributions to reduce environmental impact	2.8
Environmental harm costs	Costs incurred for taking actions to remedy past pollution (restoration of contaminated areas, etc.)	25.0
Total		1200.0

Environmental performance results

Item	Results
CO_2 emissions	11,747 tons-C
Recycling rate	92.0%
Amount of PRTR substances transferred/discharged	2.87t
No. of Eco-Products	18

Environmental benefits

Unit: millions of yen

Item	Results
Cost-savings from energy conservation (electricity, gas, heavy oil)	119.6
Cost-savings from cutting use of service water	3.4
Cost-savings from waste reduction, changing disposal contractors and gain from sale of valuable materials from waste recycling	44.4
Total	167.4

Evaluation of environmental indicators

Item	Definition	Results
Return on investment (Financial gain/Environmental costs)	Economic benefits obtained at some cost	14%
Percentage of Eco-Product sales (Eco-Product sales/Total new product* sales)	Degree of contribution from environmentally sound products	17%

* New products refer to those that were newly developed or designed and have been in the market for not more than 3 years.

Environmental accounting rules

(1) Classification of items: Follows the format specified in "A Guideline for Developing an Environmental Accounting System" (2000 Report) published by the Ministry of the Environment
(2) Period: April 2001 to March 2002
(3) Scope: 15 Omron Group sites in Japan
(4) Depreciation costs: Not included
(5) Environmental R&D costs: Calculated by multiplying development costs by the environmental improvement-related percentage
(6)Environmental R&D benefits: Contribution of Eco-Products to sales

Promotion of Environmental Awareness

Aiming to raise the level of environmental conservation activities, Omron provides its employees with educational opportunities to enhance ecological awareness.

Eco Life Sheet (Home-use Environmental Accounting Book)

Omron has published its Eco Life Sheet and distributed it among its employees. This sheet serves as an environmental accounting book for electricity and gas consumption at home and also provides useful hints for environmental conservation. This sheet helps everyone to have a more ecological lifestyle while also benefiting from savings. During fiscal 2002, Omron aims to promote the use of this sheet among more families.

Environmental activity bulletin board

In 1996, Omron launched an environmental activity bulletin board for its in-house network system. This system encourages employees to exchange opinions and information regarding environmental conservation via e-mail and online forums.

Environmental Conservation Month

Every year during our Environmental Conservation Month in June, we arrange in-house presentations of exemplary environmental efforts for Omron executives and employees in attendance. We also invite environmental experts to give seminars.

Employee suggestions for ecology

During environmental conservation month, all employees are encouraged to submit suggestions for environmental activities. In 2001, three Award of Excellence winners and nine Merit Award winners were selected from among 1,434 entries. Twenty-five other suggestions were also posted on the environmental activity bulletin board. Employee suggestions have already contributed to environmental solutions. Examples include the employment of digital technology for use of less paper and reduction of cardboard boxes by improving packaging methods.

Omron News

This regular internal publication introduces a full range of corporate information. Also covering topics concerning environmental protection and social contributions, Omron News helps employees keep up to date with management direction while encouraging environmental awareness. For overseas employees, e-ONR (Omron News in English) is available online.

Eco News

Kusatsu Factory regularly publishes its own Eco News to help employees keep track of ongoing environmental conservation programs. Similar publications are also available at other sites, contributing to enhanced employee awareness.

Environmental awards

Winners of Chairman's Award from Recycling Promotion Association

◆ Kyoto Office

In recognition of waste paper recycling to produce toilet paper, plus composting food leftovers as organic fertilizer for a tea farm, and subsequently purchasing the tea from the farm.

◆ Mishima Factory

In recognition of zero emissions (100% recycling of waste) achieved 10 years earlier than originally intended along with integrated proactive efforts of employees to reduce the volume of waste.

Winner of Director of Kanto Bureau of Economy, Trade and Industry Award for Energy Management Excellence

◆ Mishima Factory

In recognition of air conditioning system remodeling, use of inverters for air blowers and cold water secondary pumps, use of higher efficiency lighting and other improvements based on ESCO energy saving diagnosis.

Social Performance

Omron's Social Awareness

Omron founder Dr. Kazuma Tateisi had a unique personal philosophy that stressed the need for companies to develop a sense of social awareness. Incorporating this idea, an Omron motto that clearly sets forth its commitment to public responsibility was established in 1956. This motto remains central to Omron's corporate citizenship activities based on four areas: social welfare, science & technology, arts & culture and the global environment.

Corporate Citizenship Declaration

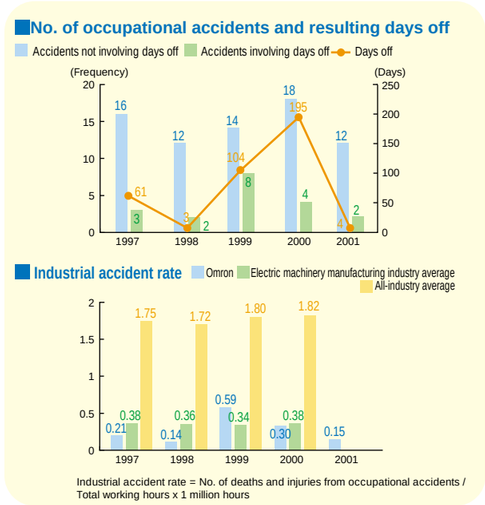
As a responsible member of society, we pledge to promote corporate citizenship activities toward the goal of creating a better society.

Occupational Health and Safety

To minimize the risk of occupational accidents and hazards and improve employee health, an Occupational Health and Safety Committee exists at each Omron business site.

Reducing occupational accidents

Omron's manufacturing lines have relatively few hazardous processes, thus resulting in a very limited incidence of serious employee accidents at work. However, minor injuries occasionally do occur from carelessness during machine repairs and adjustments.



Obtaining OHSAS 18001 certification

In March 2000, the Ayabe Factory became the first Omron facility to receive OHSAS 18001 (Occupational Health and Safety Assessment Series) certification. In June 2001, Omron Takeo became the fourth Omron Group site to be OHSAS 18001 certified.

Health management center

Maintenance and improvement of physical and mental health are essential for enjoying fulfilling lives both private and at work. Accordingly, all individuals should work on keeping healthy and preventing sickness, along with early detection of disease through regular medical checkups. Concerned for employee health, Omron provides comprehensive support through its health management center. The center's activities include management of employee health data, psychological consultations, lifestyle surveys and medical advice.

Refreshment vacations

Omron encourages employees to lead lives based on their own plans. In 1988, a program was launched to offer employees extra-long holidays so as to promote healthier and fuller lifestyles. Those who have spent 5 years in a managerial position are given a 3-month vacation. Employees who are 30 and 40 years old are given 1-week vacations, those who are 35 and 53 years old are given 2 weeks, and those who are 45 are encouraged to take 4 weeks. Employees are very enthusiastic about this program as it allows them to spend more time with their families and to pursue other pastimes they find rewarding.

Corporate Citizenship Activities

Omron's corporate citizenship activities revolve around four main areas.

Japan Sun Industries Social Welfare Organization

Japan Sun Industries runs vocational training facilities in Oita, Aichi and Kyoto Prefectures to help physically-challenged people have a greater role in society. In addition to financial support, Omron established two factories for the physically-challenged through joint efforts with this organization — Omron Taiyo Co., Ltd. (in Beppu, Oita) in 1972, and Omron Kyoto Taiyo Co., Ltd. in 1985. These facilities help physically-challenged employees to work as smoothly and efficiently as possible.

The Oita International Wheelchair Marathon and All-Japan Long-distance Wheelchair Relay Race(in Kyoto)

Since 1988, Omron has been an annual co-sponsor of the Oita International Wheelchair Marathon held every November and the All-Japan Long-distance Wheelchair Relay Race held in Kyoto every February. Employees have also participated as volunteers.

Supporting Cleanup Expeditions

Omron supports cleanup expeditions in Qomolangma and on Mt. Fuji.

Forest Preservation Campaign

Under the guidance of the local government, Omron Kyoto Office employees participated in mowing grass and thinning forests. This experience taught participants the importance of forest preservation for landslide prevention. Omron plans to continue holding this campaign on a yearly basis.

Supporting Efforts to Remove Land Mines

Omron has joined the non-profit organization, Japan Alliance for Humanitarian De-mining Support. Omron's proprietary Sensing and Control technology was combined with those of other companies to develop Mine Eye, a new mine detector that allows safer, more efficient de-mining. In March 2002, the Mine Eye introduction project for Thailand de-mining was launched with the support of the Ministry of Foreign Affairs.

The Tateisi Science and Technology Foundation

This foundation was established in 1990 to support research and international exchanges in electronics and information engineering. Underlying this is the wish for increased harmony between people and machines. During 2001, the Foundation granted 49.31 million yen in support of 20 research projects and seven international exchange projects.

Co-sponsoring Omron Kyoto Cultural Forum and Omron Keihanna Cultural Forum

These cultural forums are held in cooperation with the Kyoto Culture Center of NHK (Japan's public TV/radio broadcasting body). Public participation is welcomed. In 2001, lectures were given by Mitsugi Uehira, Director of the Kyoto Municipal Museum of Art, Ken Noguchi, a well-known mountaineer, and writer Yu Aku.

Co-sponsoring Pipe Organ Concerts at the Kyoto Concert Hall

Omron donated a pipe organ to the Kyoto Concert Hall which was completed in 1995. To give the public the joy of listening to pipe organ music, Omron also co-sponsors concerts at the hall. The hall annually hosts performances by various first-class organists from overseas and young and upcoming musicians.

Corporate citizenship activities in all regions where Omron offices or factories are located

Kyoto Omron Community Foundation

Through this organization Omron is actively providing social welfare and youth education, improving the status of women and environmental conditions, and sponsoring cultural seminars. In May 2001, three organizations devoted to volunteer activities and preservation of the environment (the women's division of a Kyoto Prefecture architectural guild, an association to beautify a river and surrounding neighborhood, and an organization providing child rearing support) were selected to receive the Human Kazaguruma (windmill) Award. In November, the Humanity Awards were presented to Mie Asaoka representing the Weather Network, an organization actively involved in the prevention of global warming issues, Fujiro Otani for his efforts to protect the rights of Hansen's disease sufferers, and Minoru Otani for his dedicated support of crime victims.

Omron Day

Omron Day commemorates the founding of our company. Since 1991, a variety of Omron Day volunteer activities have been annually organized throughout the world, such as neighborhood cleanups, tree plantings, visits to senior citizen homes, personal computer classes, donating blood, and other activities as tokens of appreciation to regional societies. These events take place during employees' normal work hours.

Offering school teachers working experience

To help children gain a knowledge of on-going business activities, Omron regularly accepts elementary, junior high and high school teachers to experience work in an office environment. With 15 teachers participating in 2001, the three-day training session introduced Omron's personnel education program, research and development, employment of the physically challenged and environmental conservation activities. A Kusatsu Factory tour was also included to help participants strengthen their understanding of Omron. The Osaka Office organized an internship program for high school students to teach them about environmental conservation.

Providing relief funds in response to terrorist attacks on the U.S.

In response to the attacks that occurred in the United States on September 11, 2001, the Omron Group as a whole donated $100,000 through the Japanese Red Cross Society and the American Red Cross. This contribution is used to support victims and to assist in the restoration of damaged areas.

Environmental Communication

Lake Biwa International Environmental Business Messe 2001

In 2001, the annual Environmental Business Messe was held on November 14-17 to coincide with the 9th World Lake Conference also held in Shiga Prefecture. The Omron booth attracted many visitors who showed considerable interest in comparing Omron Eco-label products with conventional models in terms of energy and resource conservation, as well as safety-related products and the ESCO initiative*. The Minakuchi Factory, specializing in semiconductor manufacturing, also presented its environmental conservation activities at the Mini Lake conferences held during the same time at different venues in the prefecture.

* ESCO (Energy Service COmpany) system offers a methodology for drafting and implementing energy-saving measures optimized for individual companies and based on comprehensive surveys and analyses of usage of electricity, light, water, etc.

Operation models on display to introduce energy- and resource-saving and safety features of Omron products.

Eco-Products 2001

Aiming for the sustainable development of society, Eco-Products 2001 was held in Tokyo on December 13-15. It introduced a variety of eco-friendly products that reduce environmental harm in all stages. Again this year, Omron displayed a number of Eco-label products, energy measuring systems, energy-saving systems for air conditioning, and the ESCO initiative.

Kyoto Environmental Festival

On December 8 and 9, 2001, Omron took part in the Environmental Festival sponsored by the Kyoto prefectural government. While introducing the Ayabe Factory's waste recycling, Omron personnel also had an opportunity to strengthen communication with regional residents as well as persons from other local companies and citizens' organizations.

13 Omron products receive 2001 Good Design Award

In 2001, Good Design Awards were presented to 1,290 products from 670 companies, including 13 from Omron. In addition, Omron's four electronic counters and timers were honored with the Long-life Design Award. The nation's most prestigious award in the field of industrial design, this award evaluates products based on total customer value. This involves not only an attractive appearance but also innovation and advanced technology. Recently, Universal Design and ecological considerations have also become important criteria for selection.

Timer and counter

Pedometer

Publication of environmental report

Since 1998, Omron has published annually an environmental report that details the company's Environmental Policy and environmental protection activities. The 2002 environmental report will be distributed widely among investors, customers and other stakeholders. A website dedicated to Omron's environmental activities can also be accessed for the latest news and to answer inquiries and comments from visitors.

Number of copies published

1998: 32,000
1999: 35,000
} These were sent to all stockholders together with the annual corporate report.
2000: 10,000, plus 700 in English
2001: 10,000, plus 1000 in English

Publication of site environmental report

In September 2001, the Ayabe Factory published a site report that introduces its own environmental commitment and gives detailed information on conservation activities for customers and local residents.

Ayabe Factory site report

Stakeholder Comments

Omron has heard from some of its stakeholders regarding this Environmental Report. We very much appreciate such comments and plan to use them in our future environmental efforts.

Yoshiyuki Murakawa, Manager, Management Administration Department, East Japan Railway Company

I was impressed with Omron's activities for achieving the Optimization Society based on the three key concepts of self-reliance, co-existence and creativity as defined in its Grand Design 2010. As users, we depend on Omron's useful technologies and products. Their corporate citizenship activities targeting a wide range of stakeholders support us as we strive to protect the environment and promote our business.

Nami Kimura, Environmental Consultant

Omron's program targets and its high level of achievements can be highly regarded. As a leader in corporate environmental activities, I expect them to strengthen their commitment even further, especially for reduction of harmful chemical substances. I think their environmental report can be further improved by: 1) defining each activity's effectiveness, showing ratios between environmental impact and unit production/sales over several years; and 2) including environmental benefits in accounting data, such as reductions or savings when compared to the previous year. I look forward to improved Omron reports that are more comprehensive.

Kenjiro Hirayama, Research Fellow, Kansai Research Center, Institute for Global Environmental Strategies

This year's environmental report is more detailed compared to previous years, has more environmental accounting data and shows environmental impact reduction in the distribution stage. It is also easier to understand. I recommend that Omron include more about the roles played by Omron products and business in society, especially in the area of social welfare. I also think readers are looking for information such as corporate efforts to combine universal design and environmental commitment.

Junko Ikai, Konan Environmental Association

Last year, the 9th World Lake Conference was held in Shiga Prefecture, and our association hosted a mini lake conference at the Koga venue where Omron presented their environmental activities. This event successfully helped the public, private and academic sectors and those from overseas to learn about corporate environmental activities and exchange information. Omron's environmental report attracted great attention from visitors with its beautiful cover. In fact, both Japanese and English editions quickly ran out. We wish to encourage corporations to promote environmental conservation and Omron's leadership is essential.

Takehiko Murayama, Professor, Division of Multidisciplinary Studies, School of Science & Engineering, Waseda University

My first impression was that Omron's environmental report this year was more systematic and easier to read. Relevance to the Global Reporting Initiative and the Ministry of the Environment guidelines in the table of contents also increased reliability. A detailed description of environmental conservation targets and fiscal 2001 results in the beginning of the report also made comprehension of achievements easier. As environmental performance is discussed according to the product life stage, Omron activities can be easily visualized. The full-scale launch of environmental accounting practices in fiscal 2001 can also be highly regarded. But some points need improvements. The overall material balance in the Eco-factory section should be shown in a more comprehensive manner, including other stages of product life and comparisons with the previous year. Also, some inconsistencies between future goals and results (LCA) and a lack of clear-cut goals (distribution operations) require improvements. I strongly recommend that Omron put its chemical substances control system into operation as quickly as possible.

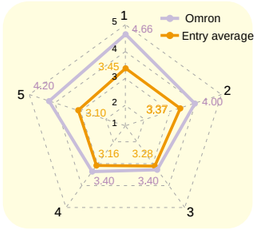
Evaluation results of Omron Environmental Report 2001 for Green Reporting Award

Results of the examination and judgement for the Omron Environmental Report 2001 for the Fifth Green Reporting Award jointly organized by Toyo Keizai Inc. and Green Reporting Forum are shown below. Due to the timing of result feedback and the 2002 report publication schedule, not all results are included in this report. However, we pledge to incorporate them in upcoming issues as much as possible for further improvements.

Criteria for judgement and scores

	Entry average*	Omron
(1) Principles concerning environmental information disclosure and environmental preservation activities should be clearly defined.	3.45	4.66
(2) The report should be systematically compiled with relations and priorities among various environmental factors clearly shown.	3.37	4.00
(3) The report should disclose corporate environmental performance in a comprehensive, clear-cut manner.	3.28	3.40
(4) The report should include self-evaluation and self-analysis of corporate environmental performance.	3.16	3.40
(5) The information contained in the report should be reliable and serve as a good communication tool.	3.10	4.20

* Average: 242 entries



Environmentally Conscious Management and SINIC Theory

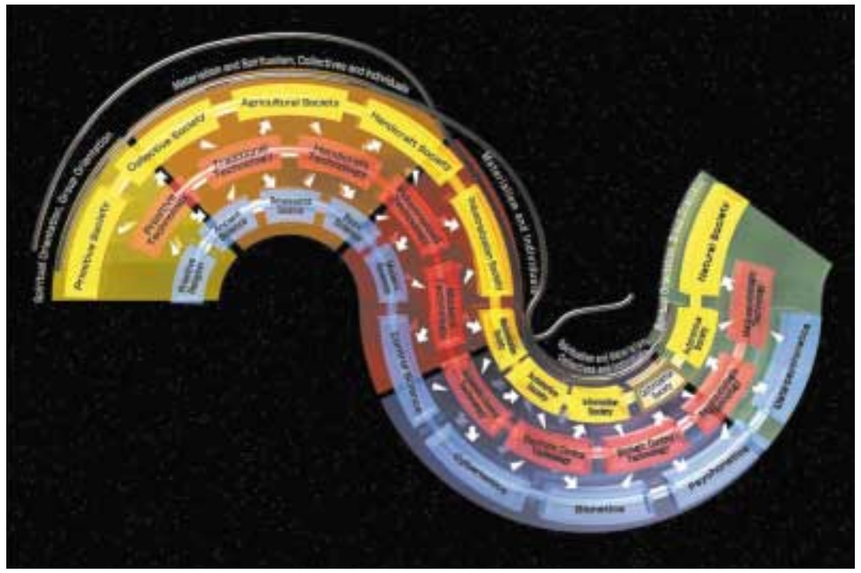
Heading for the Optimization Society

Starting from scratch

In the midst of a major worldwide recession in 1930, Omron Founder Kazuma Tateisi started a business which later developed into today's Omron. He began with the production and sale of a trouser presser using a patented utility design he personally acquired. Since the very beginning, he showed an unceasing commitment to serve society. Facing numerous challenges and hardships, Dr. Tateisi produced many inventions and unique management methodologies that were far beyond the imagination of others.

SINIC Theory for predicting future trends

In 1970, Dr. Kazuma Tateisi developed a unique future prediction method called the SINIC (Seed-Innovation to Need-Impetus Cyclic evolution) Theory and presented it at the International Future Research Conference. According to this theory, there are three factors that drive the evolution of society — science, technology and society itself, and a cyclic, mutually influential relationship among these three factors. Based on the idea that the development of society is fueled by human desire for progress, the SINIC Theory allows us to predict the direction and scale of future developments and transformations. In this theory, Dr. Tateisi clearly anticipated the arrival of today's environmentally conscious society.



Five stages of social transformation

History tells us that our current industrialized society emerged during the 14th century as a new layer on top of agricultural society. Since then, industrialized society has undergone five stages of transformation from Handicrafts to Industrialization, which evolved into Mechanization in 1870, and to Automation at the start of the 20th century. From the late 20th century to the early 21st century, we witnessed the final stage of our industrialized society — an Information Society. Industrialized society experienced an especially rapid transition during the past millennium. The SINIC Theory anticipates that the current Information Society will be followed by the emergence of an Optimization Society around 2005, eventually leading to an Autonomous Society around 2025. Today, we are taking our first steps into the Optimization Society.

Achieving the Optimization Society

In the upcoming Optimization Society, it will be more important than ever to maintain a complete balance between psychological fulfillment and materialistic achievements. As a transition is made from ongoing global 'mega-economic competition' to philosophy, people will put more emphasis on their search for fulfillment of basic human desires. This makes it essential to value people higher and treat them more fairly. When Dr. Tateisi devised the SINIC Theory, Japan enjoyed impressive economic growth. At that time he already predicted the emergence of a new society which is oriented toward maintaining a complete balance between business on the one hand and the environment on the other. His perception is impressive because what he predicted 30 years ago is actually happening today. As we run our business, it is our responsibility to preserve these DNA-like ideals of Omron inherent in Dr. Kazuma Tateisi's philosophy. By reviewing the SINIC Theory, we can explore the very frontiers of the Optimization Society.

History of Omron products

33 ● Timer for X-rays developed .

33 ● Induction-type protective relay developed .
43 ● Micro-switch, first in Japan, developed .
60 ● Solid-state proximity switch, first in the world, developed .

64 ● Electronic auto-response traffic signal , first in the world, developed and installed .
67 ● World's first unmanned train station system with ticket vending machines and automatic ticket gates installed at Kita-Senri Station, Hankyu Railway .

71 ● On-line cash dispenser, first in the world , developed and delivered .

72 ● POS system, first in Japan, developed .
73 ● Programmable logic controller SYSMAC developed .
89 ● Full-scale fuzzy logic business launched .
89 ● Finger-type automatic blood pressure monitor launched .
94 ● Solar inverter for home-use photovoltaic power generation systems launched .
96 ● Smallest and lightest card-size finger-type blood pressure monitor launched .
98 ● Global counterfeit banknote recognition unit developed from light wave sensing technology .
00 ● Next-generation Internet business, M2M*, launched .

※M2M (Machine-to-Machine) business

Soon a new era will arrive in which sensors will detect a range of data, convert data into useful information and freely distribute the information via a network. By using its Sensing and Control technology, Omron developed a new business model, M2M, that allows high-value added communications between machines over a network. By adopting M2M for automobile anti-theft systems and remote-monitoring systems, Omron intends to provide innovative security systems and new ways to streamline business operations. New network values that this "sensor net age" are producing and the creation of numerous business models are Omron's new strategy.