

# Environmental Sustainability Report 2003

Victor Company of Japan, Limited

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# **Publication of Environmental Sustainability Report**

Victor Company of Japan has continued to publish reports on the results of annual environmental activities and future plans since publication of the first environmental sustainability report in November 1999. This Environmental Sustainability Report 2003 is based on the achievements of our environmental activities for fiscal year 2002.

This report aims to clearly summarize our environmental activities in detail, but may not necessarily be complete. You can find the contents of the Environmental Sustainability Report and information not included in it on our website. We have included a questionnaire with this report so this report can be used as a communication tool. We would be grateful to receive your comments and suggestions along with your answers to the questionnaire.

Scope of this report	t: Domestic manufacturing offices, including mainly the headquarters, laboratories, and subsidiaries. When foreign manufacturing offices are included, they are described as consolidated manufacturing offices.
Report Period:	April 2002 to March 2003
URL:	http://www.jvc-victor.co.jp/

# **President Greetings**

Both consolidated and non-consolidated business profits returned to the black in fiscal year 2002, due in part to our operating performance. Thank you very much for your continued patronage of our products.

Fully recognizing the very uncertain and difficult business environment faced by our society in fiscal year 2003, we will promote the improvement of management practices, application of business strategies in five domains, and development of what we call "Only One Product" to surpass our competitors. To achieve a management style based on customers' viewpoints and to meet the needs of the times, we have revised our corporate behavior standards with a new section entitled "Coexistence with the Global Environment," which was added as part of our overall focus of making our work customer-centered.



We have also formulated a new brand statement: "The Perfect Experience" In the future, as always, we intend to practice what we preach.

In Japan, enforcement of the Soil Contamination Countermeasures Law, disclosure of information in accordance with the Pollutant Release and Transfer Register (PRTR) Law, amendments to the Law Concerning the Rational Use of Energy, recovery and recycling of personal computers, and projects to substantiate emissions trading are now under way as means to tackle environmental problems. Outside of Japan, there are also efforts to proclaim the WEEE & RoHS Directives (Waste from Electrical and Electronic Equipment and Restrictions on Hazardous Substances) in Europe and establish a law for the recovery and recycling of products and regulations for toxic chemical substances in China. In the 21st century, companies are being required to conduct environmental business management which strikes a balance between the natural environment and economic concerns. JVC will promptly comply with increasingly strict environmental regulations both in and outside of Japan and accelerate the promotion of environmental conservation activities with the aim of coexisting with the global environment.

Last year we participated for the first time in the environmental exhibition Eco-Products 2002. We will also continue to participate to make our measures for environment conservation known to the public.

In the realm of "green products" in this fiscal year, we will focus on promoting activities for energy conservation in order to achieve a high ranking in compliance with the leading runner standard. We will also focus on 3R-based (that is, Reduce, Reuse and Recycle) resource conservation and the reduction and total abolition of toxic chemical substances so we can offer lead-free and PVC-free products. We will aggressively take steps to investigate and take countermeasures against soil and underground water contamination on plant premises and disclose related information. We will also continue striving to attain our goals of reducing energy consumption at plants and of preventing waste generation in preparation for enforcement of the Kyoto Protocol.

In closing, we want to thank our many customers and partner manufacturers for their cooperation in our commitment to environment conservation activities and request their continued understanding and cooperation.

Masahiko Terada President

# **Corporate Outline**

#### Outline

Company Name : Victor Company of Japan, Limited (JVC) Head Office : 12, Moriya-cho 3-chome, Kanagawa-ku, Yokohama, 221-8528 Established : Sep. 13. 1927 Paid-in Capital : ¥34,115 million\* Sales Amount : Consolidated ¥967,640 million\* Non-consolidated ¥522,809 million\* President : Masahiko Terada Number of Employees : Consolidated 34,492\* Non-consolidated 7,997\* Business Lines : Research, development, manufacturing and sales of audio, visual, computer-related consumer, professional electronics and software,

media products, etc.

\*as of March 31, 2003

#### Mainproducts

CATEGORY	MAIN PRODUCTS
Consumer Products	VCRs,DV camcorders,TVs,Audio products and related equipments Mobile audio products,DVD players,CD radio casetter,telephone,etc.
Professional Products	Professional,educational,and information related equipment. Karaoke sysytem,Projecter,etc.
Components & Devices	High-density multi-layer printed wiring boards,D-ILA devices Motors,Optical pick-up,deflection yokes,etc.
Soft & Media	CD and DVD discs and Video tapes(recordable and pre-recorded),etc.
Others	Home furniture, Factory automation system, etc.

#### Sales





#### < Non-consolidated : Export 63% >

#### Japanese and Worldwide Manufacturing sites



#### (COMPANY NAME)

**1**JVC Manufacturing U.K Limited JМ 2 JVC Video Manufacturing Europe GmbH JV **3JVC Magnetic America Company** JM. **4 JVC Disc America Company** JD 5 JVC Industrial De Mexico S.A. DE C.V. JIN 6 JVC Electronics Singapore Pte. Ltd. JΕ **Ø**JVC Electronics Malaysia Sdn. Bhd. JEI 8 JVC Video Malaysia Sdn. Bhd. JVN 9JVC Manufacturing (Thailand) Co., Ltd. JМ (UJVC Components (Thailand) Co., Ltd. JΤ **1)**PT. JVC Electronics Indonesia JΕ **12**JVC Vietnam Ltd. JV (BJVC Beijing Electronics Industries Co., Ltd. 北京 ()JVC Shanghai Electronics Industries Co., Ltd 上海 福建會 <sup>(b</sup>Fujian JVC Electronics Co., Ltd. (BJVCGuangzhou Electronics Co., Ltd. 広州電 Kuang Yuan Co., Ltd. 光元

#### (ABBREVIATED ) (COUNTRY/REGION)

ME	
UΚ	East Kilbride, U.K.
Е	Berlin, Germany
Α	Tuscaloosa, Alabama, U.S.A
С	Tuscaloosa, Alabama, U.S.A
М	Tijuana, Mexico
S	Singapore
М	Selangor, Malaysia
М	Selangor, Malaysia
т	Navanacom, Thailand
С	Nakhonratchasima, Thailand
I N	West Java, Indonesia
L	Vietnam
電産	Beijing, China
電器	Shanghai, China
電子	Fujian, China
電器	Guangzhou, China
	Taipei, Taiwan

#### (MAIN PRODUCTS)

#### TVs

VCRs, DVD players, DV cacmcorders
Video tapes(blank)
CD, DVD(pre-recorded software)
TVs
Audio products
Audio products, Components & Devises (moter, etc.)
VCRs, DV comcorders
TVs, Components & Devises(deflection yokes),professional products
Components & Devices(deflection yokes, motors, etc.)
Audio products, Mobile audio products
manufacturing and sares of TVs
VCRs, DV comcorders
Audio products, DVD players
Components & Devices(deflection yokes)
Components & Devices (motors, and magnetic heads for VCRs, etc.)
Components & Devices (deflection yokes, etc.)

## **Basic Environmental Policy**

## (Corporate Management Philosophy)

Contributing to culture and serving society through our products and business practices

## **«Basic Philosophy»**

With our Fundamental Management Policy Slogan as our cornerstone, JVC is committed to the preservation of the global environment. We will strive in all of our business activities to be a good corporate citizen that enjoys the trust of the international community, as we help bring to create a society that can enjoy sustainable growth.



# **«Basic Policy»**

In full recognition of the fact that wide-ranging preservation of the natural environment is the social responsibility of every company, we will promote the following environmental preservation activities to the greatest technological and economical extent possible:

- 1. We will always consider the environmental effects of our business activities and ensure the continuous reduction of their impact on the environment.
- 2. We will strive to develop products with a minimum of environmental impact, and we will improve upon our environmental technologies.
- 3. We will use global resources effectively by conserving energy and resources, recycling materials actively, and reducing waste.
- 4. We will observe laws and regulations concerning the environment and if required, establish voluntary standards to ensure improvement in the quality of our management practices.
- 5. We will constantly improve upon our organizations and systems responsible for promoting environmental preservation, and by conducting environmental audits, we will strive to continuously further our efforts in this area.
- 6. We will expect our employees always to be environmentally conscious and see to it that all safeguard the environment.
- 7. We will also endeavor to conduct our foreign business activities in keeping with this policy and protect the environment as a member of the local community.

Established: April 27, 1992 Revised: April 10, 1996

## **Environmental Activity Promotion Organization**



# Promoting Environmental Conservation Activities —

In 1991, we revamped our environmental measures, departing from the system that we had employed until that time, which had focused on anti-pollution efforts. As part of this change, we established a series of special committees as well as a decision-making body called the Environmental Congress, an organization headed by our president which would focus on the promotion of company-wide environmental conservation activities.

Under the supervision of the director in charge, the policies and measures established by the Environment Congress are soliditied by different committees depending on the issue in question. All appropriate offices and divisions are then made thoroughly familiar with the policies.

Each company and division, as well as our headquarters and laboratories have established similar committees to

#### **Special Committees**

Product Assessment Committee	Discusses company guidelines for development of environmentally friendly products.			
Environmental Improvement Committee	Discusses guidelines for environmental improvement activities conducted by environmental management representatives.			
Energy Conservation     Promotion Committee	Discusses company guidelines and common measures for energy conservation activities.			
International Standardization     Promotion Committee	Discusses guidelines and common measures for continued ISO 14001 operation.			
Green Procurement Promotion     Committee	Discusses common measures for procurement of components meeting environmental quality standards.			
Lead-free Solder Promotion     Project	Discusses technical problems and the promotion of lead-free solder usage.			

proceed with the activities in accordance with the objectives and goals of the environmental management system. Our subsidiaries and foreign manufacturing plants of the offices have also proceeded with the activities, outlined in the policies.

#### **ISO Certification Acquisition Status**

Judging it vital to construct an environmental management system which promotes on-going environmental conservation activities, we are proceeding with the acquisition of ISO 14001 certification.

First to acquire certification was our Hachioji Plant in January 1997. This was followed by the certification of all of our worldwide manufacturing plants by April 2001. All domestic manufacturing plants have undergone their renewal examinations which are performed every three years, and some sites have even undergone their second renewal examinations. This is evidence that our environmental management system is taking root.

The number of sites that had acquired ISO 14001 certification as of the end of March 2003 was smaller than in the past fiscal year due to the consolidation of facilities through the restructuring of our operations and due to certification jointly acquired by combined sites. Eleven domestic sites, including laboratories, and 15 overseas sites had been certified as of this date.

In the Headquarters Group, manufacturing offices such as the headquarters, and the Yokohama and Tsurugamine plants, as well as non-manufacturing divisions such as nationwide sales facilities, system sales facilities, and service facilities have jointly acquired certification.

The number of facilities counted, including multiple divisions and subsidiaries nationwide, is 108. They include Victor Service & Engineering Co., Ltd.; Victor Arks Co., Ltd.; Sanin Victor Sales Co., Ltd.; Okinawa Victor Sales Co., Ltd.; Victor Real Estate Co., Ltd.; and Victor Leisure System Co., Ltd.

Manufacturing subsidiaries that have already acquired certification have also been consolidated into the JVC office locations to jointly acquire certification.

#### **Certified offices (see locations and operation description on page 4)**

Site (office) name	Registration date	Certification organization	Site (company) name	Registration date	Certification organization
Hachioji Plant	97/1	JACO	JVC Industrial of Mexico,S.AdeC.V	97/4	BSI
Rinkan Plant	97/4	JACO	JVC Manufacturing U.K Limited	98/4	SGS
Yokosuka Plant	97/9	JQ A	JVC Shanghai Electronics Industries Co., Ltd.	98/6	CCEMS
Mito Plant	98/3	JACO	JVC Electronics Singapore Pte.Ltd	98/12	PSB
Yamato Plant	98/8	JACO	JVC Manufacturing(Thailand)Co.,Ltd	99/4	TISI
Maebashi Plant	98/8	JACO	PT.JVC Electronics Indonesia	99/5	LRQA
Headquarters Group	98/11	JACO	JVC Video Malaysia Sdn.Bhd	99/5	LRQA
Fujieda Plant	99/1	JACO	JVC Electronics Malaysia Sdn.Bhd	99/5	KEMA
Kurihama Technical Center	99/1	JACO	JVC Beijing Electronics Industries Co., Ltd.	99/9	BVQI
Oyama Plant	99/10	JACO	JVC Guangzhou Electronics Co., Ltd.	99/11	CEPREI
Manufacturing subsidiaries			JVC Video Manufacturing Europe mbH	99/12	TUV
Victor Isesaki Electronics Co., Ltd.	98/12	JQA	JVC Components (THAILAND) Co.,Ltd	00/1	SGS
Victor Data Systems Co., Ltd.	99/2	Consolidated into Yamato Plant	JVC Magnetics America Co.	00/3	AWM
Victor Oyama Electronics Co., Ltd.	99/10	Consolidated into Oyama Plant	JVC Disc America Co.	00/8	AWM
	-		IVC Vietnem Ltd	01/4	

# **Environmental Audits**

The ISO 14001 Environmental Management System has been introduced as a tool for constructing an environmental management system and continuing to improve it effectively through PDCA (Plan - Do - Check - Action). Environmental audits and performed as part of our efforts to upgrade this system.

#### **Upgrading the Environmental Management System**

ISO 14001 standards require on-going improvement. Our goal is not just to acquire certification, because we realize that not necessarily everything goes well even if certification is acquired. We have constantly upgraded our environmental management system by using it as a component of management system to have everyone from top management to frontline employees to share common goals in the promotion of environmental conservation activities.

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Headquarter's "Certificate of Approval"

#### **Performing Environmental Audits**

Environmental audits are periodically performed to verify the effectiveness of the environmental management system and environmental performance achievements.

Environmental audits include environmental self-audits by personnel at individual sites (first-party audits), mutual environmental audits by auditors from other sites (second-party audits), and examination by external certification organizations (third-party audits).

#### (1) Internal Environmental Audits

Internal environmental audits are performed at each office at least once a

# Monthly Environmental Reports

The offices that have acquired certification summarize the achievements of their environmental activities every month in a monthly environmental report and internally disseminate the information within their own offices, headquarters, and to other offices.

The monthly environmental reports help to share environmental conservation information and to upgrade environmental conservation activities within the company.

> Yamato plant's "Monthly Environmental Report"

year to check the system for operational problems, correct deficiencies on a case-by-case basis, and upgrade the system as a whole. During recent audits, the number of problems pointed out has declined because the offices have gained experience with the management system and employees have acquired a deeper understanding of the audit activities.

One focus of every office with respect to internal environmental audits has been identifying the strong points of each audited division. The strong points, of each divisions are applied office-wide thus leading to continuous improvement.

#### (2) External Examinations

The offices that have acquired certification have annual surveillance examinations or triennial renewal examinations by external certification organizations, and external specialists examine whether their systems function well. In fiscal year 2002, 11 sites, including subsidiaries, underwent renewal examinations and 17 sites underwent surveillance examinations. All sites either passed the examinations or were deemed eligible for continued certification.

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Environmental Management

We have formulated the Voluntary Environmental Action Plan as a specific means of contributing to and ensuring the creation of a sustainable society. We have aggressively taken steps to implement this plan. We have set annual numeric targets in order to achieve our designated goals by fiscal year 2010 and are making concerted efforts to make this possible through coordination with the activities of our individual offices.

#### **Voluntary Environmental Action Plan**

As a member of the Matsushita Electric Industrial Group, we have worked in tandem with Matsushita and set joint goals.

The targets for fiscal year 2010 were partially changed during this fiscal year in accordance with the newly released contents of the WEEE & RoHS directives in the EU. In order to ensure achievement of targets, the target values for fiscal year 2005, which is our mid-point have been set and are being promoted.

Category	Targets for FY 2010	Target for FY 2003		
Green Products				
1 .Energy-saving products 2 .Toxic chemical substances	Improve energy use indicators by 50%	<ul> <li>Improve energy use indicators by 18% from the FY 2000 level</li> </ul>		
Lead, cadmium, mercury, sexivalent chrome, PVC resins,	Prohibit products shipped in 2005 from containing lead, cadmium, sexivalent chrome and mercury	<ul> <li>Introduce lead-free solder to all products at domestic and foreign plants</li> </ul>		
brominated and chlorinated flame retardants	<ul> <li>Immediately eliminate the use of designated brominated and chlorinated flame retardants</li> <li>In fiscal year 2005, eliminate the use of brominated and chlorinated flame retardants</li> </ul>	<ul> <li>Store green product information in a database and begin considering alternative products</li> </ul>		
3.Resource recycling efficiency (3R)	and PCV resins in products			
Improved scrapping efficiency	Improve resource use indicators by 70%	<ul> <li>Improve resource use indicators by 30% from the FY 2000 level</li> </ul>		
4 .Adoption of LCA (Life Cycle Assessment) introduction	Improve LCA evaluation accuracy	Expand LCA evaluation		
5.Green procurement	Evaluate chemical substance use database	$\boldsymbol{\cdot}$ Store chemical substance information in a database		
6 .External complaints (eco-labels)	<ul> <li>Develop products so that more than 90% can be classified as "green"</li> </ul>	Develop products so that more than 42% can be classified as "green"		
(Clean Factories)				
1.Reduced energy consumption	<ul> <li>Reduce energy consumption by 10% from the FY 2000 level</li> </ul>	<ul> <li>Reduce energy consumption to 1% below the previous year's level</li> </ul>		
2.Reduced CO <sub>2</sub> emissions	<ul> <li>Reduce CO<sub>2</sub> emissions by 10% from the FY 2000 level</li> </ul>	Reduce CO <sub>2</sub> emissions to 1% below the previous year's level		
3 .Chemical substances	Disclose information			
Reduced emissions and transfer	Reduce consumption, emission, and transfer	Reduce consumption, emission, and transfer		
amount of chemical substances	amount by 60%	amount to 45% below FY 1998 or 24% below FY 2000 levels		
4.Reduced waste				
Reduced total amount of wastes generated	<ul> <li>Reduce the total amount of waste generated by 40% by FY 2005</li> </ul>	Reduce the total amount of wastes generated by 25% or more from FY 2000 levels		
Zero emission	Maintain zero emissions	Achieve a recycling rate of 98%		
5.Environmental risks		Improve the level of oversight		
Environmental Activities				
1 .ISO14001 2 .Environmental accounting	<ul> <li>Reflect environment as accounting in evaluation of operating performance</li> </ul>	<ul> <li>Strengthen the global promotion system</li> <li>Strengthen the environmental accounting system</li> </ul>		

Note: In this fiscal year, green procurement standards have been revised and target values have been partially modified.

#### **Results of the Voluntary Environmental Action plan for FY 2002**

We conducted a self-evaluation in each category regarding the results of our measures to achieve the targets for fiscal year 2002.

Although most of the clean factory and environmental activity targets were achieved, we were unable to reach our targets in the category of product resource recycling efficiency (3R). The targets for toxic chemical substances were achieved with regards to lead-free solder, but could only be partially achieved for other substances.

Category	Targets for fiscal year 2002	Evaluation	Results of measures	Reference page
(Green Products)				
1.Energy-saving products	Reduce power consumption to 30% from the FY 1997 level	S	<ul> <li>Products offering lower power consumption levels were increased.</li> </ul>	P14
2 .Toxic chemical substances				
Introduction of lead-free solder	<ul> <li>Complete introduction of lead-free solder at domestic plants</li> </ul>	G	<ul> <li>Lead-free solder was completely introduced to all products at domestic and foreign plants</li> </ul>	P15
Reduce PVC-coated wiring	<ul> <li>Reduce PVC-coated wiring in main products</li> </ul>	S	<ul> <li>Deliberations were regarding alternative wiring were started and introduction of</li> </ul>	
Non-halogenated flame retardants	<ul> <li>Use non-halogenated flame retardant in Europe and at other locations</li> </ul>	S	alternative products was partially started.	
3 .Resource recycling efficiency (3R)				
Improved scrapping efficiency	<ul> <li>Improve scrapping efficiency by 30%</li> </ul>	P	Deliberations were started but the target	
Reduce use of plastic materials by half	Reduce types of plastic materials used by 50%	P	was not achieved.	
4 .Adoption of LCA	Full-scale introduction of LCA	G	<ul> <li>Number of LCA applicable products increased and LCA also applied to components.</li> </ul>	P13
5.Green procurement	<ul> <li>" Green " evaluation for more than 90% of suppliers</li> </ul>	G	<ul> <li>Of 487, 461 suppliers (95%) overhauled their green procurement standards.</li> </ul>	P17,18
6 .External complaints (eco-labels)	<ul> <li>Develop products so that more than 28% can be classified as " green "</li> </ul>	G	The development achievement was 34.3%.	P14
(Clean Factories)				
1 .Reduced energy consumption	<ul> <li>Reduce annual energy consumption by 1% or more</li> </ul>	G	<ul> <li>Energy consumption was reduced by 3.6% from the previous year.</li> </ul>	P19
2.Reduced CO2 emissions	Reduce annual CO <sub>2</sub> emissions by 1% or more	G	<ul> <li>CO2 emissions were reduced by 2.9% from the previous year.</li> </ul>	P19
3 .Chemical substances				
Compliance with PRTR law	<ul> <li>Report compliance with the PRTR law to the government</li> </ul>	G	<ul> <li>Compliance with PRTR law for FY 2002 was reported.</li> </ul>	P21
Reduced emissions and transfer amount of chemical substances	Consider reduction	G	<ul> <li>Emission and transfer amount were reduced by 35% from FY 2000.</li> </ul>	P21
4 .Reduced waste				
Reduce total amount of waste generated	<ul> <li>Reduce the total amount of waste generated by 10%</li> </ul>	G	<ul> <li>Total amount of waste generated was reduced by 24% from the FY 2000 level.</li> </ul>	P20
Zero emission	Achieve zero emission at all plants (recycling rate of 98% or more)	S	<ul> <li>An average of 97% throughout the entire company was achieved. Of 15 sites, 10 achieved the target.</li> </ul>	P20
5.Environmental risks	<ul> <li>Establish risk communication system</li> </ul>		• Risk communication committee was established.	P24
Environmental Activities				
1.ISO 14001	Consider company-wide certification	G	Deliberation was started.	P7
2 .Environmental accounting	<ul> <li>Make use of environmental accounting for environmental business management</li> </ul>	G	Environmental accounting for FY 2002     was compiled and analyzed.	P11,12

Note: The recycling rate is defined as (recycling rate) = (recycled amount)/(recycled amount + scrapped amount). The recycling rate was calculated based on the calculation method of Clean Japan Center (CJC). G: Good, S: Satisfactory, P: Poor "Environmental business management" for a company is the establishment of responsible management of both environmental and corporate management needs by striking a balance between environmental conservation costs and effects. One essential tool for environmental business management is environmental accounting. We introduced environmental accounting in fiscal year 1999 in accordance with guidelines set by the Ministry of Environment and with the aim of ensuring transparent business management through the aggressive disclosure of information.

#### **Environmental Accounting**

Environmental Management

We introduced environmental accounting in Japan in fiscal year 1999 and overseas in fiscal year 2000 as a vital tool for incorporating environmental activities in to the entire management program. We are currently compiling data on a global scale, including from our overseas offices, in conformity with the Environmental Accounting Guidelines 2002 announced by the Ministry of Environment.

In this fiscal year, we researched at complied data on costs involving capital investment and expenses put toward environmental conservation as well as on and the economic effect of environmental conservation measures.

#### Analyzing Environmental Conservation Costs

The domestic and foreign environmental conservation costs for fiscal year 2002 amounted to 600 million yen for capital investment and 2,300 million ven for expenses, for a total expenditure of 2,900 million yen. This was less than the previous year, in which capital investments of 700 million yen and expenses of 2,400 million yen totaled 3,100 million yen. However, from a global viewpoint, the total sum of foreign capital investment and expenses increased from 280 million yen to 360 million ven. This was because shifting production bases to other countries accelerated introduction of lead-free solder equipment aimed at the total abolition of lead solder from printed circuit boards produced outside of Japan. In fiscal year 2003, more lead-free solder equipment will be introduced, and domestic and foreign capital investment in particular is expected to increase.

Domestic and foreign expenses for fiscal year 2002 did not change significantly. However, domestic offices will decrease in number, and conversely, foreign offices are expected to increase in number due to growth in production.

# Scope of Environmental Accounting

Period: April 2002 to March 2003 Scope: Domestic main offices (12 plants), domestic subsidiaries (5 companies) and foreign subsidiaries (17 companies)

The scope is the same as that for environmental performance data.

Environmental Conservation Costs Capital investment and expenses for environmental conservation activities (unit: one million yen)						
Category		Description	Expenses	Investment	Total	
	Pollutant prevention	expenses and investment required for pollution prevention	421	50	471	
Cost in the	Global environmental conservation	global warming prevention and ozone layer protection	128	132	260	
business Recycling area		waste reduction, recycling, and appropriate disposal	373	2	375	
Subtotal		922	184	1,106		
Upstream and Do	ownstream Costs	Eco-product and green purchase costs Measures to recycle home appliances, containers, and packaging	398	0	398	
Management Costs Envisor		Environmental management costs ISO certification acquisition and maintenance, training, and personnel costs	554	0	554	
Research & Development Costs		Research & development costs for reducing environmental impacts, such as development of eco-products, power consumption reduction, and lead-free solder	302	424	725	
Social Costs		Costs for benefication measures, donations, financial aid, information disclosure, environmental advertising, and environmental exhibitions	2	0	2	
Environmental Damage Costs Other costs such as recovery payments, compensatory payments, and pena soil contamination		Other costs such as recovery payments, compensatory payments, and penalties for soil contamination	164	0	164	
Total			2,341	608	2,949	

Note: Expenses include labor costs; however, depreciation of capital investments is not included.

# Analyzing Environmental Effects

It is important not only to cover the costs of environmental conservation, but also to identify the economic effects accurately.

In addition to the effects of reducing energy consumption and waste disposal expenses through environmental conservation, we also accurately ascertain profits made on the sale of valuable materials through the recycling of wastes or used products and evaluating their environmental effects. To establish the results of reduction measures, in addition to tabulating the single-year results (2.01 million yen), we also calculated the effects that emerged this year as a result of our endeavors over the past two years to determine the cumulative effects (4.57 million yen) for a three-year period.

The table to the right indicates that the effects of environmental performance result in to economic effects.

As previously described, shifting production bases to other countries has decreased domestic energy consumption, CO<sub>2</sub> emissions, and the amount of wastes generated. Conversely, the amount of digital videotape and highdensity multilayer boards produced has increased, and the amount of PRTR substances used has increased.

It can hardly be said that the economic effects are greater than the environmental conservation costs. However,

Environmen	Environmental Effects Here, the monetary amount has been calculated based on concrete data regarding reduced power consumption and waste disposal expenses achieved through environmental conservation measures (unit: one million yen).							
		Moneta	ry effect					
	Classification	Single year	Cumulative effect over three years					
	Reduction of energy consumption at offices	71	295					
Effects of	Reduction of waste disposal expenses	19	42					
reduction	Reduction of water supply and sewage expenses	2	3					
	Reduction of packaging and logistics expenses	16	24					
	Profit on sale of valuable material involving recycling of plant wastes	92 (single year)						
Profit	Profit on sale of valuable resources involving recycling of used products		1 (single year)					
	Total	201	457					

Notes: • Cumulative effects resulting from capital investment for the past two years are included in the amount of cumulative effects for the three-year period.

· These figures do not reflect supposed effects of risk management, etc.

Primary environmental Performance Effects Overseas plants not includ The amount of total packagin	led. g materials and styrofo	am used in wrapping p	arts is not included.
Category	FY 2001	FY 2002	Reference page
Amount of reduced energy (kiloliters)	▲5,884	▲1,731	P19
Amount of reduced CO2 emissions (tons)	▲8,207	▲2,127	P19
Amount of reduced industrial wastes generated (tons)	▲3,631	▲549	P20
Amount of reduced industrial wastes finally disposed of (tons)	▲553	+5	P20
Amount of reduced hazardous air pollutants used (tons)	▲6	+1	P22
Amount of reduced PRTR substrates used (tons)	▲222	+124	P21
Amount of reduced PRTR substrates generated (tons)	▲50	+8	P21
Amount of reduced total packaging materials used (tons)	▲8,548	▲1,397	P15
Amount of reduced styrofoam used (tons)	▲754	▲186	P15

Numeric values are compared with those of the previous year: The "D" marks indicate the amount reduced compared with the previous year.

the transition graph below shows that although environmental conservation costs have not changed significantly,

the environmental conservation effects have steadily increased each year.



#### Future Outlook

In the future, we will also make use of environmental accounting as an indicator of environmental business management and take investment effects into consideration when implementing measures. By taking more effective measures, we will aim at improvement of environmental performance. In particular, our future focus will be on investment and effects related to overseas operations. We will take steps to construct a system allowing information concerning events in other countries to be obtained more accurately and feedback to be provided more quickly.

## **Customer Satisfaction/Eco-Product Development**

We will reduce environmental impacts related to the life cycle of products by designating as "green products" those goods which show consideration for global warming prevention, recycling, or are otherwise environmentally friendly. We have set a target of increasing the rate of green product development to 90% or more by fiscal year 2010.

#### **Green Products**

In order to create a sustainable society, the environmental impact of products themselves must be reduced over their entire life cycle. We have begun full-scale development of products that have less environmental impact – socalled "green products." To certify a product as a green product, it must be an industry leader and also meet at least one of the following requirements: complies with the energy consumption standard, does not employ toxic chemical substances, or complies with the resource consumption standard.

#### **Product Assessment**

We established JVC Product Assessment Standards in 1993 to evaluate the impacts of products on the environment over their entire life cycles and currently conduct product assessments of all products. The life cycle assessment (LCA) approach has now also been added to identify the environmental impact level from more angles. Product assessment is an essential condition for products to be certified as being "green."

#### LCA -

Life cycle assessment (LCA) is one approach for analyzing and assessing the environmental impact of products throughout their life cycles, from collection of product materials, to manufacturing, assembly, transportation, use, recycling, and finally to disposal. Through LCA, we will reduce the impact products have on the environment by analyzing their environmental impact and specifying processes which have the greatest impact, so that we can focus our efforts on taking appropriate measures.

We will use LCA effectively as a tool for reducing the environmental impact of product and to efficiently and steadily promote LCA while checking the degree of for improvement and effects.





3. Operation based on Chemical Substance Management Rank Guidelines

#### **Eco-labeling**

New products to be released after April 1, 2003 that are assessed as particularly environmentally friendly will bear an eco-label such as the one shown below.

FOO	Power consumption reduced to 97%
Eco	(Power consumption: 00 W Compared to car prior model XX-00)

This "eco-label" is used uniformly across the Matsushita Electric Group and applied to products of both domestic and foreign manufacture. It is employed not only for finished products, but also to parts and units on the market calling attention to the fact that they are environmentally friendly products.

In addition to the relevant product catalog, eco-labels are affixed to the products themselves and to packing boxes

#### whenever possible.

The labeling standard requires the products to satisfy the following conditions:

- (1) They satisfy our Green Products (GP) standards.
- (2) They are industry leaders in the following categories, which are also indicated on the label:
  [Save] Energy conservation
  [Green] Lack of toxic chemical substances
  - [3Rs] Reduce, Reuse, Recycle
- (3) The products subjected to the Law on Promoting Green Purchasing in Japan comply with the Green Purchasing Standards.

The Eco-label Certification Standards are displayed on our website and stored in the Environmental Labels and Information Database of the Ministry of Environment.

#### **Reducing Product Power Consumption**

The global warming issue is closely related to the daily energy consumption problem. In consideration of carbon dioxide (CO<sub>2</sub>) emissions, thought to be a dominant cause of global warming, results of LCA-based assessments show that the amount of CO<sub>2</sub> emitted by the energy consumption of products in actual use in the home is overwhelmingly greater than CO<sub>2</sub> emitted by energy consumption in the manufacturing process. To cooperate in achieving the national reduction target values based on the Kyoto Protocol, we are promoting reduction of energy consumption, with our goal being to maintain our front runner status in the field of televisions and video recorders. These items are designated as equipment covered by the Law Concerning the Rational Use of Energy.

According to the Energy Conservation Performance Catalog (winter 2002), issued by The Energy Conservation Center, Japan, four of our models show up in the top five in the category of home S-VHS video recorders containing a broadcast satellite tuner.



#### International Energy Star Program

Recently, the energy consumption of office equipment, which has become commonplace not only in the office but also in the home, has become an issue for every country. Accordingly, the international Energy Star program was established in October 1995 by an agreement between the Japanese and U.S. governments as one way of dealing with this problem. This program, begun as a means of protecting the global environment, sets an energy conservation standard for office equipment. Products that meet the energy conservation standard are permitted to bear the international Energy Star logo. In the U.S., televisions and video recorders are also screened under this program, and our products also bear this logo.



**Green Products** 

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#### **Eco-labeling Programs**

In August 2000, JIS standards regarding "Eco-labeling Programs" were made public. The eco-label indicates to what degree home electric appliances achieve national energy conservation standards and helps consumers to compare performance when selecting appliances. Our televisions are among the appliances subject to this system. Products that achieve 100% of the energy conservation standard bear a green label and products that achieve less than 100% of the energy conservation standard bear an orange label.



#### Measures to Develop and Introduce Lead-free Solder

The Europe Union the first to prohibit the marketing of products which contain electronic circuits and boards in which lead solder has been used, effective July 1, 2006. Similar regulations are expected to spread worldwide in the future. There is concern that lead will pose a public health hazard as products using lead are disposed of in landfills and spread by acid rain, which then contaminates the soil and is eventually absorbed into the human body when ground water is consumed.



DV camcorders boards



We at JVC took measures early on to develop lead-free solder as a substitute for lead solder. In fiscal year 2002 at our plants worldwide, we started manufacturing and selling boards and products which do not use lead solder.

During fiscal year 2003, we will incorporate lead-free solder into all of our Victor and JVC brand products.

#### Measures to Improve Packaging Materials

Two examples of improving environmentally friendly packaging materials are introduced here.

One example is an improved DVD-RW disk package which uses a waterless printing method developed jointly with SEIEIDO Printing Co., Ltd. As a result of this method our disk package was certified as a "butterfly-compliant" package by the Waterless Printing Association (WPA) of Japan. (The butterfly symbol is a mark of the WPA.)

While the ordinary offset printing method results in strong alkali waste fluid in the development stage, this waterless printing method gives off no hazardous waste fluid. Our disk package was recognized as an environmentally friendly package and has been mentioned in eight industrial newspapers (see photograph).

Another example is an improvement in packaging materials for CD-ROM spindle motors. Styrofoam was conventionally used for packaging, but due to its great environment impacts, the specifications were changed so that cardboard materials are now used for all packages. This increased the efficiency of loading spindle motors onto a tray significantly and enhanced the reduction and recycling efficiencies of packaging materials, resulting in a considerable improvement in environmental impacts (see photographs).



Conventional packaging



Styroloam: 50 motors/tray Amount of packaging materials used : 6.9 g/spindle motor



Recyclable packaging

## **Examples of Customer Satisfaction/ Eco-Products and Recycling**

#### Example of customer satisfaction / eco-friendly goods

(standard television) AV-29KB3 AV-21K3 (widescreen television) AV-32X1500 AV-36X1500 Achieved standby power consumption of 0.1 W.

#### (plasma television) PD-35DH3

photo: AV-36X1500.

Achieved power consumption of 286 kWh/ year, or a reduction of 38 kWh/year of the same model from the previous year.





#### (camcorder) GR-D50KJP

Achieved 16.5% weight reduction and 46% volume reduction of the same model from the previous year.



(business-use DV videocassette recorder) BR-DV3000

Achieved power consumption of 13 W, or a reduction of 50%, and reduced CO2 emission by 46% and volume by 51% from previous model number BR0DV600A.



#### Collection and Recycling of Portable Rechargeable Batteries —

With the collaboration of our distributors, our service and sales divisions have led the way in taking their own independently measures to collect portable rechargeable batteries. Following the enactment of the Law for Promotion of Effective Utilization of Recyclable Resources (the "3R Law") in April 2001, we have joined the Japan Battery Recycling Center (JBRC), which was established by the Battery Association of Japan, to promote activities to collect and recycle portable rechargeable batteries such as NiCd, nickel metal-hydride, lithium ion, and small seal lead batteries.

Ten nationwide sites operated by Victor Service & Engineering Co., Ltd. are registered with the JBRC as collection sites for used portable rechargeable batteries.

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[Portable Rechargeable Batteries] This refers to batteries that can be repeatedly charged and recharged, They have recently been widely used for video cameras, laptop computers, and cellular phones. A battery that is used only once is called a disposable battery.

#### **Recycling Home Appliances**

The second year since the enactment of the Law for Recycling of Specified Kinds of Home Appliances has passed smoothly.

Our products subject to this law are televisions, and the number of televisions re-merchandized in fiscal year 2002 reached 219,000.

This is 117% of the fiscal year 2001 level. The rematerialization weight is 4264 tons (126% over the previous year), and the materials on the chart at right were reduced.

We were able to achieve a television re-merchandizing rate of 69% as compared with the standard of 55% prescribed by the Law for Recycling of Specified Kinds of Home Appliances.

In the future, we will also take measures



not only to use materials that are easy to recycle but also to ensure recyclingconscious design.

#### [Law for Recycling of Specified Kinds of Home Appliances]

 This law, which was enacted in April 2001, requires the following of certain entities:

 User:
 Appropriate disposed of four types of used home appliances including and payment for transportation and recycling

 Distributor:
 Obligation to collect the four types of home appliances previously sold or repur chased, followed by appropriate delivery to the manufacturer-specified collection location

Manufacturer: Obligation to carry out recycling that exceeds the standard value designated by law.

Development of environmentally friendly products requires not only our own efforts but also the cooperation of many suppliers that provide us with various materials. In December 1998, we established Green Procurement Guidelines to help everyone to understand our environmental concept. Since then, we have encouraged our many suppliers to do their part in providing materials that will reduce environmental impact.

#### Green Procurement Partner System

There have been increasingly stringent demands placed on recent corporate activities for social responsibility and ethics concerning environmental issues. In this fiscal year, we established more stringent Green Procurement Guidelines and introduced the green procurement partner system. This system establishes partnership with our suppliers that deliver parts, devices, and raw materials to make them more environment-conscious. As an introduction to this system, we held an orientation for about 550 domestic suppliers in May 2003. We will next introduce this system to foreign partners.

#### Assessment of Suppliers Through Green Procurement Program —

Assessment of suppliers through the green procurement program is based on three standards: suppliers' handling of environmental issues, environmentally friendly levels of materials and products to be purchased, and the presence of process control.

#### Creating in a Database Amount of Chemical Substances with Environmental Impact Contained in Procured Products

When parts and materials are procured, we present to the suppliers our Management List of Chemical Substances with Environmental Impact and request them to report whether the parts and materials to be delivered contain designated substances and, if so, the amount of the substances. We will then create a database based on the report results and utilize it as a tool for identifying substances with great environmental impact by assessing the amount of chemical substances with such impact in our products. We will therby improve the level of environmentalfriendliness of the products, then resulting in the reduction or total elimination of such chemical substances.





#### Toxic Chemical Substance Management Standards —

In our report on the content of chemical substances with environmental impact, we specifies the substances to be managed based on environmental laws and regulations, industrial standards, and corporate standards by classifying them into the categories prohibited (34 substances), restricted (3 substances), and monitored (29 substances). These classifications also used as the standards for green procurement management, which prohibit products from containing prohibited substances and ensures their eliminations.

# Restrictions on the Use of PVC products

Generally, halogenated compounds such as PVC resins are used for elec-

tric wires, surface sheet materials of wood cabinets, and insulating tape used in electronic products. There is concern, however, that heavy metals such as lead and cadmium are often contained as additives and have great environmental impact at the time of disposal. Our management standards specify separate plans for each product that lay out how the use of PVC will be totally eliminated in that item.

		Chemical Substances with Environ	mental Impact	
34 Prohibited	Asbestos	Dioxin	Mercury and compounds thereof	1,1,2-trichloroethane
Substances	Benzene	Dibenzofuran	Nickel and compounds thereof	Trichloroethylene
	Chlorofluorocarbon	1,1,1-trichloroethane	Lead and compounds thereof	Ethylene oxides
	Halon	Carbon tetrachloride	Tributyl tin	Chloromethyl ether
	Polychlorinated biphenyl (PCB)	Dichloromethane	Terphenyl tin	Benzylidene=trichloride
	Polybrominated diphenyl ether (PBDE)	Arsenic and compounds thereof	1,2-dichloroethane	Methoxsalen
	Polybrominated biphenyl (PBB)	Beryllium and compounds thereof	1,1-dichloroethylene	Polychlorinated naphthalene
	Polychlorinated terphenyl (PCT)	Cadmium and compounds thereof	Cis-1,2-dichloroethylene	
	Pentachlorophenol (PCP)	Sexivalent chrome and compounds thereof	Tetrachloroethylene	
3 Restricted substances	Formaldehyde	Chloroethene (monomer)	PCV and PVC blends	
3 Restricted substances 29 Monitored	Formaldehyde Halogenated aromatic hydrocarbon	Chloroethene (monomer) Metal carbonyl	PCV and PVC blends N-methyl acetamide	Ethylene glycol ether and acetate
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons	Chloroethene (monomer) Metal carbonyl Organotin compounds	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide	Ethylene glycol ether and acetate Phthalates
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons Antimony and compounds thereof	Chloroethene (monomer) Metal carbonyl Organotin compounds Cyanide	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide N-methylformamide	Ethylene glycol ether and acetate Phthalates Hydrazine
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons Antimony and compounds thereof Cobalt and compounds thereof	Chloroethene (monomer) Metal carbonyl Organotin compounds Cyanide Phenol (monomer)	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide N-methylformamide Diethyl amine	Ethylene glycol ether and acetate Phthalates Hydrazine Picric acid
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons Antimony and compounds thereof Cobalt and compounds thereof Selenium and compounds thereof	Chloroethene (monomer) Metal carbonyl Organotin compounds Cyanide Phenol (monomer) Toluene	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide N-methylformamide Diethyl amine Dimethyl amine	Ethylene glycol ether and acetate Phthalates Hydrazine Picric acid Acrylonitrile
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons Antimony and compounds thereof Cobalt and compounds thereof Selenium and compounds thereof Ttellurium and compounds thereof	Chloroethene (monomer) Metal carbonyl Organotin compounds Cyanide Phenol (monomer) Toluene Xylene	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide N-methylformamide Diethyl amine Dimethyl amine Nitrosamide	Ethylene glycol ether and acetate Phthalates Hydrazine Picric acid Acrylonitrile N,N-dimethyl acetamide
3 Restricted substances 29 Monitored Substances	Formaldehyde Halogenated aromatic hydrocarbon Halogenated fatty acid hydrocarbons Antimony and compounds thereof Cobalt and compounds thereof Selenium and compounds thereof Ttellurium and compounds thereof Thallium and compounds thereof	Chloroethene (monomer) Metal carbonyl Organotin compounds Cyanide Phenol (monomer) Toluene Xylene Polycyclic aromatic hydrocarbons	PCV and PVC blends N-methyl acetamide N,N-dimethylformamide N-methylformamide Diethyl amine Dimethyl amine Nitrosamide Nitrosamine	Ethylene glycol ether and acetate Phthalates Hydrazine Picric acid Acrylonitrile N,N-dimethyl acetamide Epichlorohydrin

To achieve the targets of the Kyoto Protocol, under which measures are to be taken globally, we have taken steps to reduce energy consumption. In fiscal year 2000, we were able to reduce energy consumption by 17.5% from the fiscal year 1990 level. Consequently, a new mid-term target was set to reduce energy consumption by 10% from fiscal year 2000 levels by FY 2010. We have promoted measures to achieve this as a company target. From the viewpoint of global warming prevention, the effects of not only CO<sub>2</sub> resulting from energy consumption, but also other greenhouse gases contribute greatly to the warming of the earth. Therefore, a report on greenhouse gases other than CO<sub>2</sub> is also made.



#### Measures for Energy Conservation

The graph to the left shows changes in energy consumption including the energy consumption of domestic subsidiaries. Because in addition to electric energy, we also use heavy oil, kerosene, and city gas as energy sources, a crude oil equivalent for each form of energy is used for the calculations, in accordance with the Law Concerning the Rational Use of Energy.

In fiscal year 2002, energy consumption was reduced by 3.6% from the previous year, thus achieving our target. Total energy consumption was reduced by 14% from fiscal year 2000 and the basic unit of sales was reduced by 13% from fiscal year 2000. They were reduced by 29% and by 33% from fiscal year 1990, respectively, which is a significant reduction. In addition to efforts to integrate and merge manufacturing facilities, this is attributable to efforts to streamline manufacturing facilities and save electricity daily.

#### **Controls on CO2 Emissions**

The graph to the right also shows changes in CO<sub>2</sub> equivalent to energy used at domestic offices, including subsidiaries. Because CO<sub>2</sub> emissions differ depending on the type of energy involved, the CO<sub>2</sub> equivalents for electricity, heavy oil, kerosene, and city gas were used for the evaluation, based on the list of emission factors resulting from a review at the Greenhouse Gases Estimation Committee (GMGS) of the Ministry of Environment.

In fiscal year 2002, CO2 emissions were reduced by 2.9% from the previous year, and the target was achieved. Total CO2 emissions were reduced by 13% from fiscal year 2000 and the basic unit of sales was reduced by 16% from fiscal year 2000. They were re-



duced by 41% and by 43% from fiscal year 1990 levels, respectively, which is a significant reduction. However, a restructuring of our operations has shifted manufacturing division operations overseas, and domestic operations have come to focus on engineering and de-

velopment. Therefore, under the present circumstances, investment-effective energy conservation measures have decreased in number in Japan. We intend to continue to promote prevention of CO<sub>2</sub> emissions by making efforts to switch to high-efficiency equipment and make use of inverters.

#### **Greenhouse Gases Other than CO2**

As examples greenhouse gases other than CO<sub>2</sub> resulting from use of energy, HFC and PFC are used as etching gases for research and development of quenching substances for electronic

parts. We use about 270 kg of these gases annually. When this consumption of the gases is converted into CO<sub>2</sub>, the annual emission becomes about 2,000 tons. Although most of the gas

used as etching gas is decomposed in the reaction vessel, we are considering switching to alternative materials based on the voluntary action plan of the Battery Association of Japan. We have taken measures to reduce landfill wastes in the first place by preventing, wherever possible, wastes from being and by sorting and recycling generated wastes that are generated. In fiscal year 2002, we set out to achieve the target of company-wide zero emissions to which would recycle 98% or more of wastes at all domestic plants. Unfortunately, 5 of 15 sites could not achieve this target. This may be attributable to the increase in PVC pallets from other countries and the generation of wastes, such as unsortable compounds, that are difficult to recycle with existing technology.

	Domestic consolidations	Foreign subsidiaries	Global total
Total amount generated (tons)	13,213	6,003	19,216
Amount recycled (tons)	6,422	4,484	10,906
Amount reduced (tons)	6,581	233	6,814
Amount outsourced (tons)	210	1,286	1,496
Recycling rate	97%	78%	88%

#### **Achievements for FY 2002**

In fiscal year 2002, all domestic plants aimed at zero emissions, but none were able to achieve the target. The domestic consolidated recycling ratio reached 97%, whereas our target had been 98%. In fiscal year 2003, all domestic plants will aim at zero emissions again. The recycling ratio for foreign subsidiaries reached 78%, up 2 points from the previous year. However, achieving zero emissions requires many future problems to be solved by selecting local recycling manufacturers and enhancing recycling technology.



#### **Breakdown of Wastes and Recycling Rates**

The following table lists a breakdown of wastes generated at all domestic plants, including subsidiaries, as well a changes in the recycling rate.

The recycling rate of waste plastics, waste paper, and waste wood remains high, but in fiscal year 2002, the recy-

cling rate of scrap metal dropped. This is because wastes containing metal and plastics bonded in unsortable states were generated in large quantities.

The total recycling rate has peaked for these three years. The transition graph

above indicates that the amount of wastes generated has not changed significantly for the past two years. To achieve a recycling rate of 98% or more and a target of zero emissions, we will take practical measures to reduce the amount of each waste generated.

	Amount generated	Composition	Recycle rate (%)			
	(tons)	(%)	FY 2002	FY 2001	FY 2000	
Sludge (inorganic, organic, and mixed)	349	2.6	97	81	75	
Waste paper and waste wood	3,319	25.1	98	98	92	
Waste plastics	2,373	18.0	99	98	95	
Waste liquid (waste oil, waste acid, and waste alkali)	6,257	47.4	96	94	99	
Scrap metal (ferrous and nonferrous)	669	5.0	85	96	98	
Other (animal wastes and other material)	246	1.9	93	92	65	
合計	13,213	100.0	97	97	96	

Since 1997, we have participated in a PRTR project in which the Japan Federation of Economic Organizations has taken the initiative through the Battery Association of Japan and has made reports. The PRTR law has been fully enacted since April 2001, to require each place of business to send reports to the Ministry of Economy, Trade and Industry via the relevant prefectural governor effective April 2002. Based on survey results of PRTR substances, we summarized the total of PRTR designated Type I substances we used.

In the following table, consumption rates to the amount content of the substances mainly found in products. The amount removed indicates the amount of substances detoxified through reactions and decomposition, and amount transferred indicates the amount of substances carried off-site.

FY 2002								FY	2001		
Substance	Number of	Usage	En	nission (tons	)	Consumption	Amount	Amount	Amount	Usage	Emission and
Substance	business	(tons)	Air	Water	Soil	(tons)	(tons)	(tons)	(tons)	(tons)	transferred (tons)
Toluene	10	405.42	66.35	0.00	0.00	0.00	0.00	5.21	333.86	283.07	64.06
Soluble copper salts (except complex salts)	1	142.40	0.00	0.01	0.00	85.19	0.00	0.00	57.19	157.58	0.01
Cobalt and compounds thereof	1	122.68	0.00	0.00	0.00	16.95	0.00	0.11	105.62	99.52	0.09
Lead and compounds thereof	9	5.11	0.00	0.00	0.00	3.46	0.00	0.97	0.67	11.72	0.06
Manganese and compounds thereof	4	7.04	0.00	0.00	0.00	0.32	0.00	0.07	6.64	8.06	0.18
Formaldehyde	2	8.83	0.00	0.21	0.00	5.76	0.00	2.87	0.00	8.20	2.79
Ethylene glycol	6	1.17	0.08	0.02	0.00	0.70	0.00	0.38	0.00	0.96	0.80
Nickel	3	2.96	0.00	0.00	0.00	1.75	0.00	0.03	1.18	3.03	0.01
Xylene	7	2.22	1.34	0.00	0.00	0.87	0.00	0.01	0.00	2.74	1.96
Chrome and trihydric chrome compounds	2	2.29	0.00	0.00	0.00	2.18	0.00	0.07	0.04	1.15	0.04
Other		3.67	0.85	0.00	0.00	0.69	0.12	1.61	0.40	3.86	2.61
Total		703.77	68.62	0.24	0.00	117.87	0.12	11.32	505.60	579.88	72.63

#### PRTR Survey Results (FY 2002 and 2001: main chemical substances heavily used)

In fiscal year 2002, the usage of chemical substances with an environmental impact increased, compared to the previous year. This is because manu-

144

1997

80.0

60.0

40.0

20.0

0.0

gener

Amount

as well as decreases, but the overall amounts generated and transferred, as well as the rate of generation and transfer have been reduced.

In the future, we will also strive for the appropriate management of chemical

12.5

73

2001

25

(%) 20

rate

transfer I

rate and t

Generation

15

10

5

0

80

2002

substances, and the accurate identification of the amounts generated and transferred, and promote the reduction of usage and the amounts of chemical generated and transferred.

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## "PRTR" is

an abbreviation of "Pollutant Release and Transfer Register"

PRTR is a system under which companies identify the amount of various toxic chemical substances discharged in the environment, the sources of these chemicals, and whether they were contained in wastes and carried off-site. The data are reported to the administrative agency that compiles and announces such information. Legislated in 1999, the PRTR law was fully enacted in April 2001, and the first reports on the amount generated began in April 2002.



102

1998



139

1999

122

2000

Fiscal year

(%) Rates of generated and transferred (%) Rates of generation and transfer

## **Air Conservation**

In response to the "Guidelines for Promotion of Companies' Voluntary Management of Hazardous Pollutants" which was issued by the Ministry of Economy, Trade and Industry, the electrical and electronics industry formulated the "Voluntary Management Plan for Hazardous Pollutants." We have researched the present levels of use and discharge of the 13 substances indicated in the Guidelines, and have worked to reduce these levels.

We have also established voluntary standards for boiler gases and periodically measure their emissions for improvement.

#### **Voluntary Management for Hazardous Air Pollutants**

The electrical and electronics industry has identified four substances as the primary targets for reduction and set emission reduction goals for them. Of these four substances, we long ago prohibited the use of trichloroethylene and tetrachloroethylene. In December 1997, we abolished the use of dichloromethane, which had been used as an alternative substance for chlorofluorocarbons in manufacturing processes. We are considering the reduction of, or use of alternative substances for, dichloromethane and trichloroethane that are currently used in small quantities for studies and quality testing. Additionally, as a result of recent measures, formaldehyde is no longer released into the air.

#### **Ozone layer protection -**

In March 1994, all offices in the company eliminated the use of ozone depleting substances such as specified chlorofluorocarbons (CFCs) alternatives for chlorofluorocarbons (HCFCs), and 1,1,1-trichloroethane.

#### Change in Hazardous Air Pollutants Use unit: [tons/year] Values within parentheses indicate the amount released into the air.

Substance	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
Trichloroethylene	_	—	-	_	—
Tetrachloroethylene	_	—	-	_	—
Dichloromethane	0.695 (0.399)	0.114 (0.102)	0.073 (0.057)	0.041 (0.036)	0.035 (0.030)
Trichloromethane	0.009 (0.003)	0.010 (0.005)	0.012 (0.007)	0.005 (0.004)	0.008 (0.006)
Benzene	—	—	-	0.000 (0.000)	0.000 (0.000)
Acrylonitrile	—	-	—	—	—
Acetaldehyde	—	—	-	—	_
Vinyl chloride monomer	_	_	—	—	—
1,2-dichloroethane	_	-	-	_	_
1,3-butadiene	—	-	-	—	—
Formaldehyde	6.521 (0.000)	10.129 (0.000)	13.580 (0.000)	8.194 (0.000)	8.83 (0.000)
Nickel disulfide	—	—	—	—	_
Nickel sulfate	0.026 (0.000)	0.018 (0.000)	0.019 (0.000)	0.017 (0.000)	0.017 (0.000)

#### Change in the Amount of Air Pollutant Emissions Company-Wide

The following table lists changes in the emissions of nitrous oxides and sulfurous oxides from our boilers company-

wide. The use of large boilers has been discontinued, reducing air pollutants significantly.

				u	nit: tons/year
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
Nitrous oxides (NOX)	23.4	18.9	12.6	4.1	9.0
Sulfurous oxides (SOX)	3.7	4.2	1.8	0.0	0.0

Measured Levels of Exhaust Gases from Boilers at the Headquarters and the Yokohama Plant for 2002

Measurer	nent Categories	Regi	ulatory Standard \	Measured value	(maximum value)	
N: Standard	State 0_C and 1 atm.	National standard	Prefectural Standard	Voluntary Standard	FY 2001	FY 2002
Boiler No.2	Nitrous oxide (ppm)	180	60	60	53	59
	Smoke and soot (g/Nm3)	0.3	0.3	0.15	0.0068	0.0046
Boiler No.5	窒素酸化物(ppm)	180	70	70	55	60
	煤塵 (g∕Nm³)	0.3	0.3	0.15	0.0069	0.0056
Boiler in Moriya	窒素酸化物(ppm)	180	70	70	59	58
	煤塵 (g/Nm <sup>3</sup> )	0.3	0.3	0.15	0.0039	0.0042

The table to the left indicates the overall amount of exhaust gases released from boilers at our Headquarters and the Yokohama Plant. We manage the exhaust gases from boilers at our manufacturing sites with voluntary standard values that are stricter than national or municipal standards.

Also, the levels of exhaust gases in fiscal year 2002 exceeded the voluntary standard values. We have also taken measures to reduce the usage of tap water, industrial water, and ground water all of which are precious nature resources. In order to prevent the contamination of the water that drains from our plants and the surrounding soil, we manage our facilities with voluntary standard vales stricter than either national or municipal standards. If contamination is found to exceed environmental quality standard, we report the situation to the concerned local government agency immediately, restore the normal status, and take permanent countermeasures as quickly as possible.

#### **Reduction of Water Usage**

We use tap water, industrial water, and ground water as service water. For several years, overall usage has decreased significantly thanks to improvement in manufacturing processes and the consolidation of plants.

In fiscal year 2002, the usage of industrial water increased due to a jump in production of multilayer boards at the Headquarters and the Yokohama Plant, but the usage of tap water and ground water decreased, leaving the total amount of water used company-wide decreased. In the future, we will continue to reduce our usage of precious water resources.



#### Investigation of Contamination of Soil and Ground Water

Although we do not currently use chlorinated organic compounds, in the past we used 1,1,1-trichloroethane in processes to clean parts and boards. From the viewpoint of risk management, however, in 1996 we began testing soil (and ground water when necessary) at all manufacturing sites (except at the Headquarters and the Yokohama Plant located in the reclaimed bay area) in accordance with the Tentative Guideline (Tentative Guideline for Measures to Investigate Contamination of Soil/ Ground water by Chlorinated Organic

![](_page_23_Picture_9.jpeg)

Investigating soil at the vacant land of the old Isesaki Plant

Compounds). The results show that the chlorinated organic compounds exceeding the environmental quality standard were not found at any sites investigated.

In fiscal year 2002, we investigated soil on the vacated land of the old Isesaki Plant and on the vacated land of the old Ebina Plant that was left after Victor Data Systems transferred to the Yamato Plant. The results showed no contamination of soil and ground water by volatile organic compounds or heavy metals on the lots of the two vacated plants.

In the future, as part of our environmental conservation plant, we will also make periodic investigations of land which becomes vacant as a result of plants transferring location or closing and at the plants in service.

#### Management of Plant Wastewater

Wastewater from manufacturing sites is roughly classified into household wastewater from cafeterias and process wastewater from manufacturing processes. We determined the categories and the frequency of our routine measurements based on the types of wastewater and the substances used in processes at all of our sites nationwide. We have also set voluntary standard values that are stricter than the national or municipal regulatory standard values to manage plant wastewater. The following table lists the measurement items, standard values and measured values at the Headquarters and at the Yokohama Plant.

Category		Regulatory Standard Value			Measured Value (maximum value)				
Category			National Standard	Prefectural Standard	Voluntary Standard	FY 1999	FY 2000	FY 2001	FY 2002
		Sexivalent chrome	0.5	0.5	0.1	ND	ND	ND	ND
		Arsenic	0.1	0.1	—	—	—	—	—
	SS	Cyanide	1	1	—	_	—	—	—
	Jori	Lead	0.1	0.1	0.05	ND	ND	ND	ND
	atec	1,1,1-trichloroethane	З	3	0.1	ND	ND	ND	ND
	ပိ	Trichloroethylene	0.3	0.3	0.03	ND	ND	ND	ND
	alth	Tetrachloroethylene	0.1	0.1	0.01	ND	ND	ND	ND
	ΗÊ	Dichloromethane	0.2	0.2	0.05	ND	ND	ND	ND
		Boron and compounds thereof	230	_	150			0.5	0.9
Its		Ammonia and nitrous compounds (nitrogen)	100	100	30			13	15
nen		Hydrogen ion concentration (ph)	5.8-8.6	5.8-8.6	6.0-7.8	6.3-7.6	6.6-7.7	6.3—7.8	6.8-7.7
effli		Biochemical oxygen demand (BOD)	60	60	7	7	7	5	З
ant		Chemical oxygen demand (COD)	60	60	20	18	15	17	11
Ъ	ms	Suspended solids (SS)	90	90	30	23	14	13	16
	ite	Extractive substance in n-hexane	5	5	2	2	ND	1	ND
	ent	Coli bacilli	3000	3000	100	ND	ND	ND	ND
	m	Soluble iron	10	10	0.8	0.26	0.32	0.18	0.19
	viro	Soluble manganese	10	1	0.2	0.08	0.08	0.4	ND
	en	Copper	З	З	0.2			0.06	0.08
	ing	Zinc	5	З	0.2	0.07	0.09	0.06	0.15
	Ę	Nickel	-	1	0.1	ND	0.05	-	_
		Total chrome	2	2	0.1	ND	ND	ND	0.06
		Fluorine(*)	15	15	3	9.7	2.8	-	-
		Total nitrogen(*)	60	60	30	28	29	18	16
		Total phosphorous(*)	8	8	4.0	2.6	2.2	1.6	1.4
		Nata: *. I and at and and values no.	التبعيل مبع أمعمان	0001	. Na vaatulata	المعربية مسملا أم			

#### Results of Measuring Plant Wastewater (Headquarters and Yokohama Plant) Unit: [mg/l]

Note: \*: Legal standard values revised on April 1, 2001.

-: No restricted item or not measured

ND: Not detected

#### **Violation of Legal Standards**

In fiscal year 2002, there was one violation of the legal standards for plant wastewater. During a routine measurement at the Yokohama Plant, pH abnormality was detected in the rainwater outlet. The results of in-house analysis of heavy metal concentration are as follows:

pH 4.0 (5.8 to 8.6) Copper 12.9 mg/l (3 mg/l) Manganese 1.1 mg/l (1 mg/l) Values in parentheses indicate legal standard values. The pH abnormality was caused by leakage of acid and corroded planting form an emergency leakage container due to a corroded patch.

We immediately repaired the patch with having the hole and purified the soil contaminated by leaked waste liquid. We also made full inspections of the equipment on the entire work floor and searched for leakage. Abnormality was not detected at other locations.

We took measures to ensure such an

accident would never occur again, drawing up plants to prevent all liquid leakage and stabling a routine of equipment maintenance and inspection.

We submitted a report citing the causes and the measures for preventing recurrence to the local government agency (Yokohama city).

There was no violation of legal standards other than this.

## **Green Logistics**

Products manufactured at plants are delivered to distributors and customers by truck, railway, and ship. In Japan, trucks bear the greatest part of this demand. However, it has recently become an issue that CO2, NOX, and suspended particulates emitted from trucks have hazardous effects on the environment and health. We are reviewing the transportation method from the viewpoint of green logistics.

#### **Direct imports to Consuming Regions**

In the past, when products manufactured in other countries were imported to Japan by ship, they first landed at a port in Tokyo or Yokohama and then were distributed to six logistics centers nationwide by truck. However, to decrease transportation by truck as much as possible, we decided to ship from overseas directly, to the ports near the logistic centers. This ensured that land transportation by truck was reduced significantly.

As a result, the number of trucks used for transportation fell by 1,441, 997.5 tons of CO<sub>2</sub> annually.

The graph at right shows the change of the ratio of direct import to local ports. Because sales in the Tokyo metropolitan district account for nearly half of the total sales, we are making efforts to achieve a final target of 46% for fiscal year 2003.

Although our proprietary distribution

network was also used before for transportation from logistics centers to stores, we discontinued use of the network at the end of 2002 and decided to use consolidated services typified by rail logistics. In the future, we will further promote joint distribution with other companies to enhance transportation efficiency.

#### Integrating Logistics Bases and Promoting Modal Shifts

In addition to six logistics centers, there are many logistics bases. To promote the enhancement of transportation efficiency, we will consolidate logistics bases.

Transportation of products manufactured in Japan to local districts used trucks for the sake of convenience, lead-time, and cost. We plan to shift this to environment-friendly transportation such as railway as well.

![](_page_25_Figure_12.jpeg)

Gateway to the sea Yokohama Daikoku-Wharf the Bay Bridge in the background

# **Environmental Impact on Foreign Subsidiaries**

#### **Energy Conservation**

CO<sub>2</sub> emissions resulting from energy used at overseas manufacturing plants totaled 115,242 tons in fiscal year 2002.

The emissions could be reduced, compared to the previous year.

## Overseas Energy Usage

	FY 2001	FY 2002
Crude Oil Equivalent (kiloliters)	45,942	45,062
CO <sub>2</sub> Emissions (tons)	116,592	115,318

#### Waste Products in Other Countries

	FY 2001	FY 2002
Total Amount Generated (tons)	4,898	6,003
Amount Recycled (tons)	3,661	4,484
Amount Reduced (tons)	80	233
Amount Finally Disposed of (tons)	1,157	1,286
Total (tons)	4,898	6,003
Recycling Rate (%)	76.0	77.7

#### **Waste Products**

The amount of industrial waste products generated at foreign manufacturing plants was 6,003 tons, and the amount recycled was 4,484 tons. The recycling rate could be improved by 1.7 percent over the previous year. The main chemical substances used overseas were toluene, lead in solder, cobalt, and nickel.

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## **Environmental Education and Awareness Programs**

Environmental education for employees is vital for them to understand the impact our corporate activities have on the global environment and for continued improvement in environment issues. To ensure advancement in environmental knowledge and education thereof, we provide employees with various forms of education and training.

Throughout the entire company, we conduct training for our employees on our corporate stance regarding environmental affairs as well as functional training for internal environmental auditors.

General training, specific operation training, and emergency response training are conducted based on ISO 14001 on-site.

The environmental awareness program is provided to motivate our employees to address environmental affairs.

# Environmental Education and Training

Our environmental education is conducted company-wide and at each of our sites.

We conduct company-wide training on our corporate environmental standpoint and policies, upon which our environmental actions are bases, as well as training for standardized company-wide qualifications such as internal environmental auditor.

At individual sites, general training and specific training based on ISO 14001 and emergency response training are conducted.

Curricula		
Company-wide	New employees	New employee training
	Newly appointed executives	Newly appointed executive training
	Environmental auditors	Internal environmental auditor training
Each site	All employees	General environmental training
	Executives	Hierarchical training
	Specific operators	Specific operation training
		Emergency response training

Additionally, we provide lectures on environmental affairs such as judicial courses for international translations and training of advisory specialists for

Results of Training for FY 2002	
New employee training	77 people
Newly Appointed Executive Training	186 people
Internal environmental auditors (including outside training)	37 people
Judicial training for international transactions	14 people
Training of advisory specialists for consumer's affairs	21 people

consumer affairs.

#### Newly Appointed Executive Training ————

This training aims to have newly appointed executives understand both global environment issues and our measures to address them, and have these executives acquire skills to carry out environmental tasks.

![](_page_26_Picture_15.jpeg)

Newly Appointed Executive Training

#### Internal Environmental Auditor Training

This training is designed to provide employees with the qualifications necessary to perform internal environmental audits and with understanding of the environmental management system, allowing them to maintain enhance the system.

Newly Qualified Internal Environmental Auditors		
FY 2001	83 people (of which 4 received outside training)	
FY 2002	37 people (of which 6 received outside training)	
Qualified internal environmental auditors		
FY 2001	Total of 644 people	
FY 2002	Total of 681 people (493 registered)	

#### Specialized Operation Training

At each site, we select the operations seen as having the largest environmental impact and provide special trainings in operational procedures an emergency response.

![](_page_26_Picture_22.jpeg)

Example of efflux prevention training at the wastewater treatment facility of the Circuit Division at the Yokohama site of Head Office.

#### **Educational Activities**

Information about environmental activities is provided on the corporate intranet as it arises to make employees conscious of environmental conservation.

![](_page_26_Figure_26.jpeg)

Web site for power consumption at the Maebashi Plant

#### **Environmental Awareness**

Starting in 1999, the Green Grand Prix program has commended employees for outstanding achievements in environmental objectives. As one event of the Environmental Month (every June), accomplishments in environmental activities for the previous year are accepted from individual sites for an Environmental Improvement Competition. Accomplishments in three areas: Green Product (GP) development, plant energy conservation and waste reduction activities [Clean Factories (CF)], as well as overall diligence are considered for each objective, and from them particularly excellent accomplishments are nominated for the Green Grand Prix.

#### Environmental Sustainability Report

The environmental Sustainability Report plays a central part in our environmental communication. This report was first published in 1999, and this present publication is the fifth so far. We print 4,000 copies each year, but due to the popularization of the Internet, the report is accessed online an even greater number of times.

An English version of Environmental Sustainability Report also plans to be published.

# According to on our Web site

In 1999 we set up a web site to which is posted information about out environmental activities. The Environmental Sustainability Report is available on the web site. In fiscal year 2002, we added information about home appliance recycling, products subject to the Law on Promoting Green Purchasing, and site reports. In the future, we will enhance our web site to provide our various stakeholders with information.

Green Grand Prix (grand prix, gold, silver, bronze)			
GP	CF	Diligent efforts	

![](_page_27_Picture_9.jpeg)

![](_page_27_Picture_10.jpeg)

http://www.jvc-victor.co.jp/

#### column

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

[Under the joint auspices of the Japan Environmental Management Association and Nihon Keizai Shimbun Inc. at the Tokyo Big Sight,] an eco-products exhibition was held December 5 – 7 (Thursday through Saturday), 2002 for eco-products.

#### **Eco-products**

Eco-products are those products and services with relatively few impacts on global environment. Eco-products have attracted attention in part because they play an important role in the shift from a conventional mass-production, mass-consumption society to a recycling-oriented society.

At Eco-Products 2002, 370 companies and groups made presentations to introduce an assortment of eco-products, from general consumer goods to industrial goods. Many people, including environmental NGOs and NPOs, local autonomous bodies and government agencies, universities and research institutions, and general consumers attended this exhibition which provided a forum to communicate about eco-products and environmental issues. A wide variety of seminars and events were also held.

Number of Visi	Number of Visitors (all events)	
December 5	34,313	
December 6	39,541	
December 7	26,629	
Total	100,483	

![](_page_27_Picture_19.jpeg)

Our booth at Eco-Products 2002

This was the first time we made presentations and introduced JVC's environmental activities and practical measures to achieve green products and clean factories. We reported the following.

- Materials used in manufacturing processes were improved.
- Energy and water resources required in manufacturing processes were reduced.
- Wastes, discharge materials, and other emissions of the manufacturing processes were reduced.
- Energy and water required for using products were saved.
- The amount of wastes generated when discarding products was reduced.
- Hazardous substances and environmental pollutants emitted when discarding products were reduced.

## **Social and Cultural Activities**

Our corporate slogan as a public institution is "Contribute to Culture and Serve Society.

Art and sports are the ultimate expressions of human creativity, embodying the power to attract audiences like none other. At JVC, we wish to share the thrills and excitement of such creative endeavors with the people around the world. For many years, we have actively supported a wide variety of cultural events such as musical, artistic, and sporting events.

We have also, as a corporate citizen, performed various community-based activities as a corporate citizen.

#### Interaction with the Community —

Every site has planted trees in its neighborhood and made the company's facilities open to the public for summer festivals.

The Yokosuka Plant and the Kurihama Technical Center have engaged in a "Flower Road to Everyone" project near there respective sites and have conducted the "Yokosuka Clean Walk," which began in 1997.

![](_page_28_Picture_7.jpeg)

Yokosuka Clean Walk

#### Eco-life 21-

Beginning in fiscal year 2001, the JVC Workers Union has conducted an annual campaign to reduce power consumption at home between July and September, the period in which power consumption increases.

In fiscal year 2002, 105 households applied for the campaign. Unfortunately, due to a sweltering heat wave, power consumption increased, compared to FY 2001, but elaborate activities were carried out to save energy at home.

#### 

JVC supports many different sports in many different parts of the world. In June 2002 we became an official partner of the FIFA World CupTM, held in Japan and Korea in June 2002. We have also supported various events since becoming an official partner of UEFA EUROTM (European Football Championship) in 1980.

Our support stems from our wish to help bring the feeling of being at an arena into people's homes, and to share the excitement of soccer with as many people as possible. That is why we go beyond being a sponsor in name only, and actively support the events behind the scenes.

![](_page_28_Picture_16.jpeg)

UEFA European Football Championship

#### Culture Exchange Through Music

In the field of music, our activities consist primarily of sponsoring the JVC International Jazz Festival, which is loved and appreciated by jazz enthusiasts worldwide. The festival is recognized around the globe as one of the premiere jazz events, featuring a star-studded lineup of top jazz musicians. These activities let fans experience the joy and beauty of music live.

![](_page_28_Picture_21.jpeg)

JVC Jazz Festival

#### **Tokyo Video Festival**

The Tokyo Video Festival is an international video competition for professionals and amateurs, sponsored by JVC. With entries from various countries with different cultural backgrounds, video creators from all over the world are able to share the joys of visual creativity, experience cultural exchange, and contribute to the development of visual culture. This competition showcases the power of images, for all to see.

![](_page_28_Picture_25.jpeg)

Tokyo Video Festival

# Activities at Over Sea

ISO 14001 certification is acquired at over sea locations, which serves as the basis for a variety of activities.

JMUK (U.K.) introduced reusable packaging to ensure that container boxes can be used up to about six times for delivery of cabinet parts.

![](_page_29_Picture_4.jpeg)

Reusable container boxes

A sorting process was implemented to simplify the recycling of used packing materials. This minimized impurities and made cardboard materials easier to deliver to recycling manufacturers. As a result, in fiscal year 2002, 186 tons of cardboard were sold to recycling manufacturers, earning 6,500 pounds

![](_page_29_Picture_7.jpeg)

Cardboard baling presses

![](_page_29_Picture_9.jpeg)

Pressed cardboard

(about 1.27 million yen). Cardboard baling presses were introduced to reduce the volume of the materials.

JVC Beijing acquired ISO 14001 certification in September 1999, and has routinely conducted environmental improvement activities based on ISO 14001 since then.

Examples of activity achievements include the following:

Achievements of Activities in JVC Beijing		
Energy Conservation	For energy conservation, fluorescent lighting at manufacturing sites was dimmed while still maintaining necessary illumination. The number of fluorescent lights that have been saved since 2001 to the present has reached 1,700.	
Recycling	Solder dross separators were introduced to increase the reuse rate of solder by 50%.	
	Sorting and collection of wastes were centrally managed to enhance the utilization rate of the blank side of paper.	
Wa	Sorting of used chemical substances was governed.	
aste	Centralized collection of waste batteries was secured.	
Laws	Smoke control purification devices were introduced in the cafeteria to make smoke emissions comply with the national standards.	
Educ	Bulletin boards to inform all employees about	

the environmental management system were established.

![](_page_29_Picture_16.jpeg)

Smoke control purification devices

#### Activities to Introduce Vegetation into Deserts –

Since 1995, the JVC Workers Union has transferred personnel to introduce vegetation into Chinese deserts. In fiscal year 2001, the focus of activities has shifted from the Kubuchi desert to the Horchin desert. In fiscal year 2002, 11 personnel participated in the activities which lasted from May 19th to the 25th. A total of 129 personnel have so far participated in the activities.

![](_page_29_Figure_20.jpeg)

Map of the Horchin desert

![](_page_29_Picture_22.jpeg)

Tree planting for introducing vegetation into the desert

Solder separator

# History of Environmental Conservation Activities

Year	JVC	Society
1991 (H3)	Environmental Administration Division established First Environment Congress held	Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures (1988) enacted Global Environment Charter by the Japan Federation of Economic Organizations signed Law for Promotion of Effective Utilization of Recyclable Resources enacted
1992 (H4)	Product assessment activities started Basic Environment Charter established JVC environmental logo established	United Nations Conference on Environment and Development (Earth Summit) held Rio Declaration on Environment and Development, Agenda 21 announced Voluntary Action Plan on Environment by the Ministry of International Trade and Industry announced
1993 (H5)	First voluntary plan formulated Internal environmental audits started	Basic Environment Law enacted
1994 (H6)	Specific chlorofluorocarbons eliminated from processes	Basic Environment Plan approved United Nations Framework Convention on Climate Change held
1995 (H7)	First internal environmental audit (domestic) completed	Law for Promotion of Sorted Collection & Recycling of Containers and Packaging enacted
1996 (H8)	Basic environment policy (revised charter) established Second voluntary plan formulated	Voluntary Action Plan on the Environment by the Japan Federation of Economic Organizations announced International environment standard ISO 14001 issued
1997 (H9)	Hachioji district acquired ISO 14001 certification (the first in Japan) Use of dichloromethane in the company discontinued JVC Del Mexico S.A. DE C.V. acquired ISO 14001 certification (first in a foreign country)	Kyoto Conference of the U.N. Framework Convention on Climate Change "COP3" held
1998 (H10)	Environment Group established Product recycling project started Green Procurement Guidelines established	Law concerning the Rational Use of Energy (introduced top runner standards) revised Law for Recycling of Specified Kinds of Home Appliances enacted Law concerning the Promotion of the Measures to Cope with Global Warming enacted
1999 (H11)	14 domestic sites acquired ISO 14001 certification 10th Environment Congress meeting held Directions of environmental activities for FY 2001 and thereafter were decided.	Policies for Investigation and Countermeasures for Soil and Ground Water Pollution announced Law Concerning Special Measures Against Dioxins enacted Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in their Management enacted
2000 (H12)	Recycling Project Promotion Room established Results of environmental account (FY 1999) compiled JVC Green Grand Prix program started 11th Environmental Congress held (Product Assessment Guidelines)	Law for Promotion of Sorted Collection and Recycling of Containers and Packaging fully enforced Basic Law for Establishing a Recycling-Based Society enacted Law on Promoting Green Purchasing enacted Law for Promotion of Effective Utilization of Recyclable Resources (3R Law) enacted
2001 (H13)	Collecting and recycling of used TV sets started Acquisition of ISO certification at manufacturing sites worldwide completed. Registering of products subject to Law on Promoting Green Purchasing started Lead-free Solder Introduction Promotion Project established Assessment of environmental performance (jointly with Matsushita Electric Industries) started Participated in portable rechargeable battery recovery and recycling program ISO certification at domestic sales and service offices acquired	Basic Policy of Law on Promoting Green Purchasing decided Fluorocarbon Recovery and Destruction Law enacted Law Concerning Special Measure against PCB Waste enacted Specified Household Electric Appliances Recycling Law enforced Agreement over the Kyoto Protocol at COP7 reached U.S. Mercury Control Bill enacted
2002 (H14)	13th Environment Congress meeting held (Environmental activities for FY 2002 confirmed.) Function of Recycling Project Promotion Room transferred to Environment Group	Japanese Government ratified the Kyoto Protocol Comprehensive Government Policies for Predicting Global Warming and Climate Change announced Construction Materials Recycling Act fully enforced Law Concerning the Promotion of the Measures to Cope with Global Warming revised World Summit on Sustainable Development (Environment and Development Summit) held
2003 (H15)	Green procurement standards created	WEEE & RoHS Directives posted through official journal Soil Contamination Countermeasures Law enforced Revised Law Concerning the Rational Use of Energy enforced

Thank you very much for reading this report. This report still needs revision; however, we will work diligently to enhance the contents, and would appreciate any frank suggestions and requests from concerned parties.

![](_page_31_Picture_0.jpeg)

![](_page_31_Picture_1.jpeg)

If you have any suggestions or questions on the contents, please contact us at the following address.

#### Contact:

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Published: June 2003

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![](_page_31_Picture_8.jpeg)