



ENVIRONMENTAL
REPORT

2002



YAMAHA CORPORATION

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Outline of the Reporting Organization

Company Outline (as of March 31, 2002)

Name:	Yamaha Corporation
Head Office:	10-1, Nakazawa-cho, Hamamatsu Shizuoka 430-8650, Japan
Founded:	1887
Incorporated:	October 12, 1897
Representative:	Shuji Ito, President
Paid-in Capital:	28,533 million yen
Results (April 2001-March 2002)	
Unconsolidated : Net Sales:	316,742 million yen
Ordinary income:	6,530 million yen
Net income:	-25,328 million yen
Consolidated : Net Sales:	504,406 million yen
Ordinary income:	7,680 million yen
Net income:	-10,274 million yen

Primary Businesses:

- Musical instruments: Pianos, digital musical instruments, wind, string and percussion instruments, educational musical instruments, professional audio equipment, soundproof rooms, music schools, english schools, content distribution, tuning
- AV/IT: Audio products, IT equipment
- Lifestyle-related products: System kitchens, system bathrooms, washstands, furniture, parts for housing facilities
- Electronic equipment and metal products: Semiconductors, speciality metals
- Recreation: Sightseeing facilities, accommodation facilities, ski resorts and management of sports facilities
- Others: Golf products, automobile interior components and fittings, industrial robots, molds and magnesium parts

Number of Employees: Unconsolidated 6,251
Consolidated 23,020

Yamaha Group/Consolidated Subsidiaries (including overseas companies) 82 companies
Companies accounted for under the equity method 3

Note Concerning Publication of this Environmental Report

In compiling this Environmental Report, Yamaha Corporation utilized the Environmental Reporting Guidelines published by the Ministry of the Environment and made reference to the Sustainability Reporting Guidelines of the Global Reporting Initiative(GRI). In order to enhance the information provided in this report, Yamaha has endeavored to also include some information concerning Yamaha Group companies, thus expanding the scope of reporting.

The scope of information and reporting includes Yamaha Head Office and production factories in Japan (Main Factory, Kakegawa Factory, Tenryu Factory, Toyooka Factory, Iwata Factory, and Saitama Factory). The environmental accounting report includes information concerning Yamaha Music Craft Corporation, Yamaha Kagoshima Semiconductor Inc. and D.S. Corporation.

This report covers FY2001 (April 2001 to March 2002). Some items may include more recent information in order to explain progress subsequent to March 2002.

The next Environmental Report is scheduled to be published in July 2003.

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For further information please visit our website below:
<http://www.yamaha.co.jp/>

Creating and Implementing Yamaha's Policy on the Environment
 Yamaha has positioned environmental preservation as a priority corporate activity and in 1994 adopted Yamaha's Policy on the Environment as an expression of the company's fundamental thinking on the environment. Since then, Yamaha has taken every opportunity to promote this policy among its employees through training and education.

YAMAHA'S POLICY ON THE ENVIRONMENT

Premise

Earth exists not only for those of us who currently live on it, but also for our descendants. We must live in a way that will ensure a future for our children and grandchildren. It is, therefore, our duty to protect our valuable environment so that all living creatures can continue to live on this planet forever.

Policy

Yamaha's corporate objective is to continue to create 'Kando' and enrich culture with technology and passion born of sound and music, together with people all over the world. We have to be aware that corporate activities are deeply related to the environment, and we at Yamaha acknowledge our responsibility to nature. We are dedicated to enriching people's lives and helping to preserve the environment as we live together harmoniously in society.

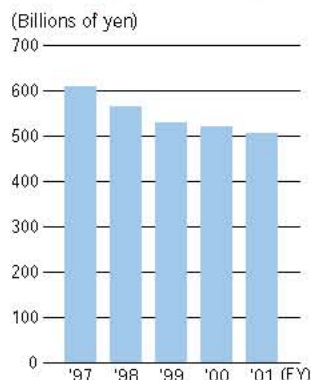
The Six Principles of Yamaha's Corporate Environmental Activity

1. Make efforts to develop technology and provide products that will be as sensitive as possible to the earth's animals, plants and environment.
2. Promote energy-saving activities and make effective use of resources in the areas of research and development, production, distribution, sales and service.
3. Minimize and recycle waste products, and simplify waste disposal procedures at each stage of production and distribution, as well as during and after use.
4. Strictly follow environmental rules and regulations, encourage environmental protection activities, and ensure the well-being of employees and citizens by practicing sound environmental management.
5. In developing operations overseas, make environmental protection a priority through investigation and understanding of the environmental standards of the host country.
6. Actively distribute information, contribute to the community and carry out educational activities concerning environmental preservation.

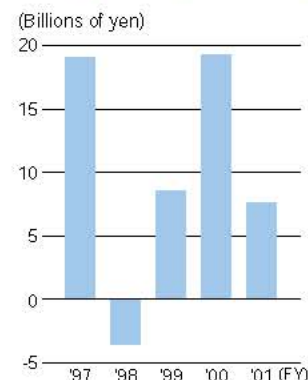
History of Environmental Initiatives

- 1974 Established the Environmental Management Division
- 1975 Started company-wide energy conservation activity
- Started local clean-up activity
- 1981 Started electrical power generation using wood chips (at Tenryu Factory)
- 1990 Completely abolished the use of trichloroethylene and tetrachloroethylene
- 1993 Abolished the use of specified CFCs and trichloroethane
- Market debut of the Silent Piano that takes living space into consideration; the first of a series of instruments developed and marketed as The Silent Series
- 1994 Created Yamaha's Policy on the Environment and the Action Policy
- Created the Environmental Committee and five specialist groups
- 1995 Started recycling and reuse of waste casting sand
- 1997 Announced intention to acquire ISO 14001 certification
- Yamaha Kagoshima Semiconductor Inc. becomes the first Yamaha Group company to acquire ISO 14001 certification
- 1998 Kakegawa Factory acquires ISO 14001 certification
- Started disclosure of information regarding soil contamination by chlorinated organic solvents and initiated countermeasures
- 1999 Iwata and Saitama factories both acquire ISO 14001 certification
- Established "Environment, Safety and Health Proposals" Month
- Started ISO 14001 certification acquisition support business
- 2000 Toyooka factory acquires ISO 14001 certification
- Published the first edition of Yamaha Environmental Report
- Introduced environmental accounting
- Completed soil remediation measures; continued purification of groundwater
- 2001 Main Factory and Tenryu Factory acquire ISO 14001 certification (All factories in Japan acquire ISO 14001 certification)

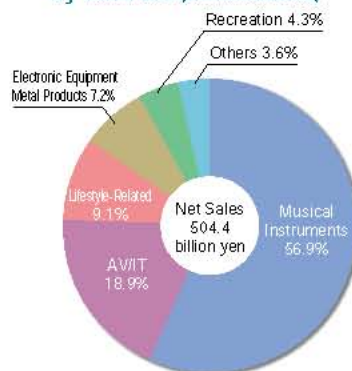
Net Sales (Consolidated)



Ordinary Income (Consolidated)



Breakdown of Net Sales by Business (Consolidated)





Foreword

The world in which we live has provided us with abundant nature for countless eons and we have received a multitude of benefits. The starting point of the core of Yamaha's business, "sound and music," is the "sound of trees" enjoyed in the plentiful forests nurtured by nature.

In recent years, however, activities of humankind have rapidly expanded beyond global permissible limits and as a result, serious environmental problems on a global scale have arisen including depletion of natural resources, global warming, and the generation of large volumes of waste.

The era of copious energy and resource usage and high-volume production and disposal is now over. We must create high-value products with long life spans using less resources.

Yamaha has added to its corporate principles the brand slogan "Creating 'Kando' Together". We will give first priority to safety, and will care for the environment. Yamaha will be a good corporate citizen, and observe laws and work ethically, developing the economy, and contributing to local and global culture.

Looking back on Yamaha's history, which spans more than one century, continuous efforts towards environmental preservation through the accumulation of technology and research has been our most important mission. Specifically, we seek to lighten the impact on the environment imposed by our corporate activities through measures to conserve energy and save resources.

Music is a medium that transcends time and borders, and unites people in heart and spirit. The twenty-first century, known as the "century of the environment," has begun. Together with peoples around the world, we will make every effort to ensure that the next century and beyond can continue to enjoy "sound and music" in a broad array of forms.

Shuji Ito, President

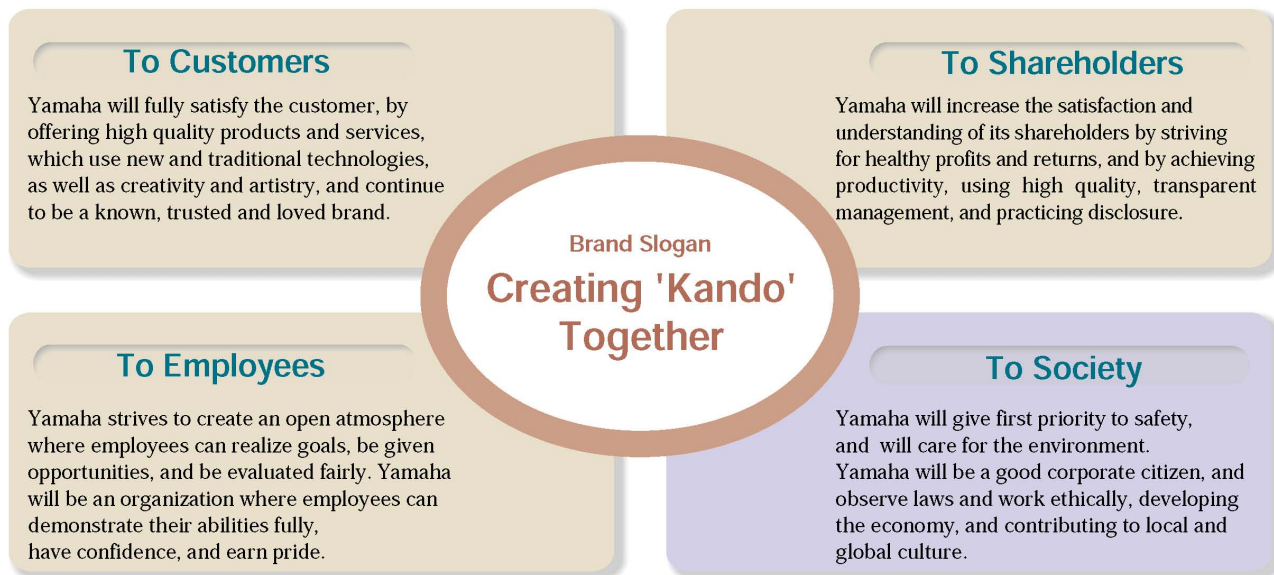
A handwritten signature in black ink that reads "Shuji Ito". The signature is written in a cursive, flowing style.

Corporate Principles

Corporate Objective

Yamaha will continue to create 'Kando' and enrich culture with technology and passion born of sound and music, together with people all over the world.

'Kando' (is a Japanese word that) signifies an inspired state of mind.

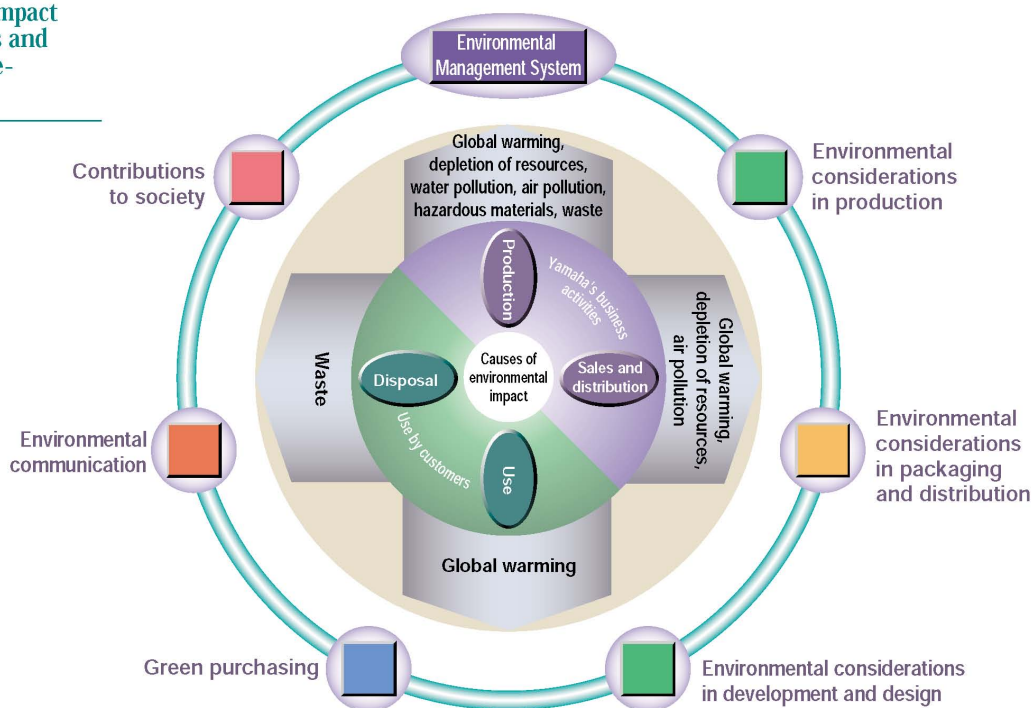


The new corporate principles adopted by the Yamaha Group in February, 2001 incorporated environmental preservation undertakings in the "Promise to Society," and the group companies continue to implement them.

Awareness of environment impact caused by corporate activities and measures to achieve a recycle-oriented society.

In all stages of its business activities including product development, parts and materials purchasing, production, sales, distribution, and use and disposal of products by customers, Yamaha is impacting the global environment. In these processes, various resources are consumed, including water and energy from sources such as electricity and oil.

In order to decrease the impact on the environment, even if only by a small degree, Yamaha works to minimize the burden on the environment at all stages and seeks to create a recycle-oriented society.



Highlights of Environmental Activities in FY2001

Environmental activities undertaken by Yamaha in FY2001 have been summarized in this chapter. The page numbers indicated under each item denote the pages in the Report where more information can be found.

Environmental Management

New Corporate Principles Incorporate Environmental Preservation Undertakings p. 4

The new corporate principles adopted by the Yamaha Group in February, 2001 incorporated environmental preservation undertakings in the "Promise to Society." Yamaha will give first priority to safety, and will care for the environment. Yamaha will be a good corporate citizen, observe laws and work ethically, developing the economy, and contributing to local and global culture.

Promotion of Environmental Management p. 8

Following the acquisition of ISO 14001 certification by the Yamaha Head Office and all production factories in Japan in FY2000, the Yamaha Group plans for all affiliates to acquire certification by the end of FY2002. In FY2001, 6 affiliates in Japan and overseas acquired certification, bringing the total number of certified sites to 22.

Environmental Training and Education p. 8

In order to actively promote environmental activities, it is important that all employees

understand the importance of the environment. To achieve this, the Yamaha Group has implemented rank-specific training, specialized training, and general training. Yamaha also seeks to raise levels of specialized knowledge by promoting the acquisition of environment-related public qualifications and participation in a variety of external specialized courses and study groups. During "Environment Month" each June, Yamaha invites external instructors to speak at environmental seminars. The seminar held in June 2001 was attended by 370 persons.

Environmental Audits p. 9

Yamaha conducts the following types of environmental audits: periodic "external audits" conducted by ISO 14001 certified external auditors, and "internal audits" and "environmental patrols," conducted by internal environmental auditors. Results of audits conducted in FY2001 Yamaha Head Office and all production factories are shown below. Corrective measures were taken with respect to all items indicated.

Audit/Review	Items Indicated
External audits	1 item that required improvement
Internal environmental audits	38 items that required improvement
Environmental patrols	62 items indicated

Environmental Accounting p.10

In FY2001, with the objective of contributing to environmental preservation, Yamaha created a system to manage environmental investments and enhance effectiveness and accuracy of management. Environmental accounting figures were calculated for three affiliates as a trial for implementing consolidated environmental accounting.

Environmental Preservation Costs (Unit: million yen)

Investment	Expenses
308.7	2,080.0

Environmental Preservation Effects

Details	Reduction volume
CO ₂ emissions volume	7,576 t-CO ₂
Water consumption	290 km ³
Volume of chemical substances released*	37 t
Waste disposal volume	746 t

*Chemical substances refers to chemical substances subject to PRTR that are used by Yamaha (approximately 51 substances).

Economic Effects (Unit: million yen)

Saving from energy conservation measures	106.8
Saving from water conservation measures	2.8
Saving from reduction of waste disposal expenses	-20.0
Profit from sale of items recycled for a fee	23.6
Saving from reduction of packaging material used in distribution	6.6
Saving from reduction of copy paper usage	4.0

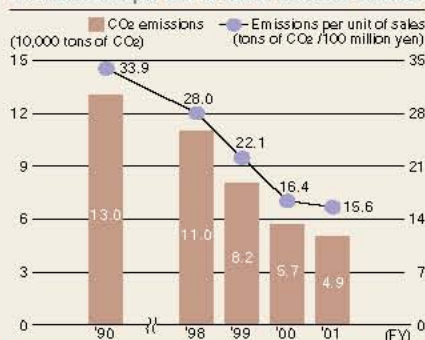
※Figures are for Yamaha's Head Office and production factories in Japan

Environmental Considerations in Production

Prevention of Global Warming p.17

As a result of the introduction of energy conservation equipment, strict control of air-conditioning temperatures and other measures, Yamaha was able to reduce CO₂ emissions to 49,000 t-CO₂ down by 7,576 t-CO₂ from the previous year. This reduction translated into a 5.3% improvement in terms of reductions per unit of sales.

CO₂ emissions per unit of sales / emission volumes



Water Conservation Measures p.17

Yamaha took action to conserve water, including the implementation of well-water leakage prevention measures by moving underground tanks and pipes aboveground to improve ease of repair. As a result, water consumption was reduced by 290,000 m³ from the previous year to 1.34 million m³.



Reduction of CFCs and Substitute Formaldehyde p.18

Yamaha completely eliminated the use of specified CFCs in FY1993. Yamaha has also been reducing the usage of substitute CFCs used in the degreasing process for metals. As a result, usage in 2001 was down to 1.1 tons, an 89% reduction from the level in 1995. Yamaha also reduced atmospheric emissions of formaldehyde to 39% of the FY1995 level through improvements in the gluing processes.

Compliance with the PRTR Law p.18

Yamaha used 51 of the substances subject to PRTR in its production factories in Japan in FY2001, and the total volume handled was 376 tons. Of this total, 29% was released into the environment, 2% was transferred as waste, and 69% was either consumed or incorporated into products.

The volume of substances discharged into the atmosphere went down by 26% from 145 tons in the previous year to 108 tons. This reduction was achieved by adopting the use of alternative substances and by making improvements to and simplifying the methods of usage.

Reduction of Industrial Waste and Recycling p.18

The volume of waste generated in FY2001 decreased by 1,808 tons from the previous year to 6,763 tons. The volume of resources recycled was 4,898 tons and the recycling rate increased by 3% from the previous year to 72%. As a result, waste disposal volume decreased by 746 tons from the previous year to 1,623 tons.

Environmental Considerations in Product Development

Promotion of Green Procurement — p.11

To develop and manufacture products with less environmental impact, it is essential to take measures from the procurement stage of parts and raw materials. For this reason, Yamaha created guidelines called the "Yamaha Green Procurement Standard in FY2001." In June 2002, Yamaha held an explanation meeting for approximately 200 of its major suppliers and requested their cooperation in a survey to determine the chemical substances contained in parts and raw materials.



Yamaha Green Procurement Standard



Alto-saxophone



Home theater system

Actions for Achieving Environmentally Considerate Designs — p.12-16

Yamaha is proceeding with efforts to reduce usage of resources, conserve energy, lessen the environmental impact of parts and raw materials and improve recyclability, using its product assessment system.



Porta-tone (new design used in 9 models)

Examples of environmental actions taken in FY2001

Action	Details	Products
Conservation of resources and energy	Reduction in power consumption, standby power requirements	Home theater systems, PA/power amplifiers
	Reduction in resource usage	Avitecs Mini type, Acoustic guitar
Reduction of environmental impact of parts and raw materials	Elimination of lead from solder	Printed circuit board
	Reduction in the usage of chemical substances	Complete elimination of chromium oxide for the primer in the painting process for wind instruments
Recyclability improvement	Elimination of the use of grease in keyboards	Portatones (9 models)
	Dismantlability improvement	Routers

Environmental Considerations in Packaging and Distribution

Attempt at Assessing the Environmental Impact of Distribution — p.19

Yamaha relies almost exclusively on outsourced transportation companies for its distribution needs. However, in order to reduce CO₂ emissions during transportation, trial operation to assess the existing situation and implement measures for reduction were started in FY2001.

Alternatives For and Reducing Packaging Materials — p.19

Yamaha has switched the wooden skids used for export of grand pianos, to reinforced corrugated cardboard and has begun reusing wooden skids in Japan. As a result, use of wooden and PVC packaging materials reduced 58.6% and 61% respectively. Use of foam cushions increased by 3.8% as a result of an increase in the sale of product sets.

Environmental Communication

Environmental Reports, Environmental Corner — p.20

Yamaha has sought to communicate with local communities and society at large through active information disclosures. As part of these efforts, Yamaha publishes the environmental report and has created an Environmental Corner at the Main Factory.



Social Contributions

Local Clean-up Activity — p.21

In conjunction with Environment Month each year, employees at each plant conduct "Local Clean-up Activity." In FY2001, 908 persons participated and gathered approximately 5 tons of waste.

Contributing to Society through Environmental Technology — p.21

Based on the environment-related knowledge and technology that it has developed, Yamaha launched a specialty environmental consulting service and conducts environmental seminars, etc. aimed at contributing to environmental activity on a larger scale.



Environmental Management

Results of Activities in FY2001

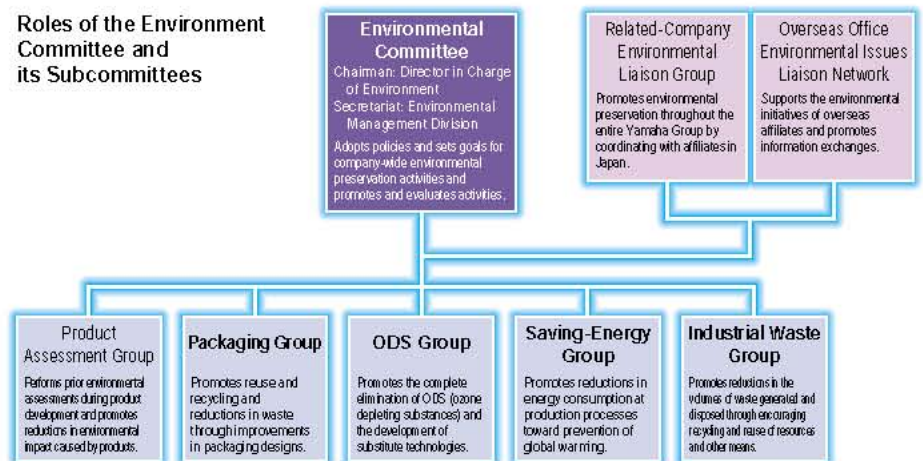
* Figures for items other than "Environmental Management System" are reported for the Yamaha Head Office and production factories in Japan during FY2001 (April 2001 - March 2002).

	Goal	FY2001 Results	Future Action
Environmental Management System	Acquisition of ISO 14001 certification by domestic and overseas affiliates by FY2002	• Six domestic and overseas affiliates acquired ISO 14001 certification, bringing the total to 22.	Acquisition of ISO 14001 certification by all domestic and overseas affiliates by FY2002
	Training of internal environmental auditors	40 employees at Yamaha and 130 persons at domestic affiliates acquired qualifications (bringing the total to 430)	Training to be continued
	Implementation of environmental patrols	• Environmental patrols were implemented in June at Yamaha's production factories in Japan by internal environmental auditors conducting reciprocal on-site inspections	Environmental patrols to be continued
Product development (product and packaging)	Promotion of the development of "environmentally-considerate products" and implementation of product assessments	• Decrease in power consumption and standby power and reduction in weight of AV products • Promotion of development of lead-free solder	• Promotion of development of environmentally-considerate design through internal LCA training • Continue promotion of development of lead-free solder
	Reduction in packaging materials by the following amounts compared to FY1999 levels by FY2002 Wood-based packaging materials: 59% reduction Foam cushions: 27% reduction Polyvinyl chloride (PVC) packaging material: 68% reduction (100% reduction of such materials in packaging for customers).	Usage compared to FY1999 levels: Wood-based packaging materials: 59% reduction Foam cushions: 3.8% increase PVC packaging material: 61% reduction	Reduction in packaging materials by the following amounts compared to FY1999 levels by FY2002 Wood-based packaging materials: 59% reduction Foam cushions: 27% reduction PVC packaging material: 68% reduction (100% reduction of such materials in packaging for customers).
Prevention of global warming	1% reduction in CO ₂ emissions per unit of sales compared to FY2000	CO ₂ emissions per unit of sales: 15.6 tons/100 million yen (5.3% year-on-year reduction) CO ₂ emissions: 49,276 t-CO ₂ /year (year-on-year reduction of 7,576 t-CO ₂) * t-CO ₂ is a unit expressing tons of CO ₂	Continuation of activities toward a 1% reduction in CO ₂ emissions per unit of sales compared to the previous fiscal year
Protection of the ozone layer	Elimination of the use of substitute CFCs by 2010	Volume used: 1.1 tons/year Year-on-year reduction of 61kg	Elimination of the use of substitute CFCs by 2010
Waste	Reduction of waste disposal volume and promotion of recycling	Waste disposal volume: 1,623 tons/year Year-on-year reduction of 746 tons	Creation of a plan to achieve zero emissions
		Volume of resources recycled: 4,898 tons/year Recycling rate: 72% (3% increase from previous year)	
Chemical substances	Reduction in discharge volumes of substances subject to PRTR	Discharge volumes of substances subject to PRTR: 108 tons/year Year-on-year reduction of 37 tons	Reduction in discharge volumes of substances subject to PRTR
	Reduction in discharge volume of formaldehyde by 64% by FY2003 (compared to FY1995)	Reduction rate: 61% compared to FY1995 Volume discharged: 116 kg/year	Reduction in discharge volume of formaldehyde by 64% by FY2003 (compared to FY1995)
Ground water remediation	Continue remediation of ground water pollution	Continued remediation of ground water using a pumping method and by filtering through activated charcoal	Continue remediation of ground water pollution
Green procurement	Set green procurement standards in FY2001	Created Yamaha Green Procurement Standards	Implementation of green procurement
Green purchasing	Implementation of green purchasing of office supplies	• Use of 100% recycled copy paper • 95% use rate (4-point year-on-year increase)	Green purchasing to be continued
Training and education	Hold environmental seminars	Environmental seminar held in June for the entire Yamaha Group with 370 persons attending	Continue holding environmental seminars
Social contribution	Implementation of local clean-up activities	908 persons participated in local clean-up activities 5 tons of garbage collected	Clean-up activities to be continued

Organizational Structure for Environmental Activities

Yamaha established the Environmental Management Section (currently the Environmental Management Division) in 1974, and in 1994 created the Environmental Committee with the director in charge of environmental matters serving as its chairman. Since then, the Environmental Committee has adopted policies, set goals, and promoted and evaluated activities, while five separate groups address individual issues.

Roles of the Environment Committee and its Subcommittees



Promotion of Environmental Management

Following the acquisition of ISO 14001 certification by the Yamaha Head Office and all production factories in Japan in FY2000, the Yamaha Group plans for all affiliates to acquire certification by the end of FY2002. In FY2001, 6 affiliates in Japan and overseas acquired certification, bringing the total number of certified sites to 22.

Acquisition of ISO 14001 Certification

	Facility	Date Acquired
Yamaha	Kakegawa Factory	1998/11
	Iwata Factory	1999/ 3
	Saitama Factory	1999/ 9
	Toyooka Factory	2000/ 6
	Main Factory	2001/ 2
	Tenryu Factory	2001/ 3
Affiliates in Japan	Yamaha Kagoshima Semiconductor Inc.	1997/11
	Yamaha Metatrix Corporation	1999/ 3
	Yamaha Music Craft Corporation	2000/ 7
	D.S. Corporation	2001/ 2
	Yamaha Livingtec Corporation	2001/12
	YP Wins Corporation	2002/ 2

	Facility	Date Acquired
Overseas Affiliates	Katsuragi Corporation	2001/11
	Nemunosato Corporation	2002/ 2
	Kiroro Associates Corporation	2002/ 2
	Yamaha Electronic Manufacturing (M) Sdn.Bhd. (Malaysia)	1998/12
	Kachsiung Yamaha Co., Ltd. (Taiwan)	1999/11
	Tianjin Yamaha Electronic Musical Instruments, Inc. (China)	1999/12
Overseas Affiliates	Yamaha Music Manufacturing, Inc. (U.S.A)	2000/12
	P.T. Yamaha Musical Products Indonesia (Indonesia)	2001/ 1
	Yamaha Electronique Alsace S.A. (France)	2001/ 3
	P.T. Yamaha Music Manufacturing Indonesia (Indonesia)	2001/12
	Yamaha Musical Products, Inc. (U.S.A)	2002/ 4
	P.T. Yamaha Indonesia (Indonesia)	2002/ 5
Taiwan Yamaha Musical Inst. Mfg. Co., Ltd. (Taiwan)	2002/ 6	

Environmental Training and Education

In order to actively promote environmental activities, it is important that all employees understand the importance of the environment. To achieve this, the Yamaha Group has implemented rank-specific training, specialized training, and general training. Yamaha also seeks to raise levels of specialized knowledge by promoting the acquisition of environment-related public qualifications and participation in a variety of different external specialized courses and study groups.

During "Environment Month" each June, Yamaha invites external instructors to speak at environmental seminars. The seminar held in June 2001 was attended by 370 persons.

Yamaha also provides environment-related information including information on environmental activities and recent regulatory trends in company newsletters and on the intranet. Yamaha takes every opportunity to actively conduct environmental training and education.

Rank-Specific Training

Title	Subjects
New employee training	New employees
Employee training	Employees assigned to the Yamaha Technical Training Center Employees assigned to the Yamaha Group Leader Training Center Employees assigned to the Yamaha Advanced Skill School
Overseas manufacturers seminar	Employees scheduled to be posted to overseas factories

Specialized Training

Seminar on environmental laws	Environmental managers and related departments
Internal environmental auditor training seminar	Persons planning to become internal environmental auditors
Wastewater treatment facility operation manager training	Wastewater treatment facility operation managers at each factory

General Training

Environmental Seminar	All employees
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A scene from the Environmental Seminar



A scene from the Internal Environmental Auditor Training Seminar

Environmental Management

Environmental Audits

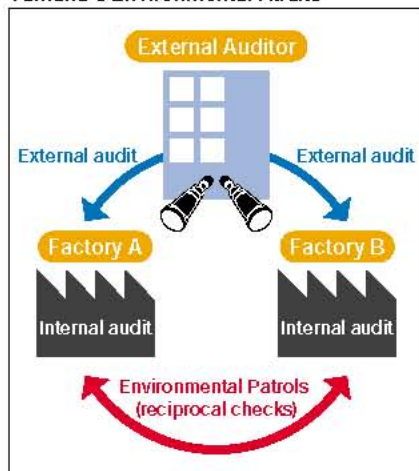
Yamaha conducts three different types of environmental audits: periodic "external audits" by ISO 14001 certified external auditors, "internal audits" and "environmental patrols," by internal environmental auditors.

The environmental patrols, which are conducted during Environment Month each June, are conducted through reciprocal on-site inspections of factories. In addition, starting this year, environmental personnel from Yamaha Head Office began performing environmental analyses in order to determine the status of environmental responses by affiliates from the perspective of conducting consolidated environmental management of Group companies.



Audit report session (Main Factory, June 2001)

Yamaha's Environmental Audits



External Audits

In FY2001, external audits by ISO 14001 certified auditors were conducted as indicated below. There was one area in need of improvement indicated concerning the environmental management program. Corrective measures were immediately implemented.



Scene of an external audit

External Audits Conducting During FY2001

Factory	Date audited	Audit type
Kakegawa Factory	October 2001	Update audit
Iwata Factory	February 2002	Update audit
Saitama Factory	August 2001	Periodic surveillance
Toyooka Factory	June 2001	Periodic surveillance
Main Factory	February 2002	Periodic surveillance
Tenryu Factory	February 2002	Periodic surveillance

Result: 1 item that required improvement

Internal Audits

Internal environmental audits conducted at individual factories in FY2001 revealed 38 items that required attention. These included failure to implement adequate corrective measures when goals were not met, to store waste in accordance with applicable rules, and to create training records. Corrective measures were taken with respect to these items in accordance with the ISO 14001 system and they were expanded to other organizations to achieve overall improvement.

Internal Environmental Audits Conducting During FY2001

Factory	Number of audits performed
Kakegawa Factory	7
Iwata Factory	4
Saitama Factory	4
Toyooka Factory	12
Main Factory	12
Tenryu Factory	9

Result: 38 items that required improvement

Environmental Patrols

On June 7 and 14, 2001, environmental patrols were conducted at Yamaha's production factories in Japan. Groups made up of internal environmental auditors from each factory and environmental personnel from the head office made reciprocal on-site inspections of environmental facilities at each factory. Environmental patrols were first conducted in 1972 and have been performed more than 30 times to date.

The six factories that were subject to patrols acquired ISO 14001 certification during FY2000 and are promoting environmental improvement activities. The number of items indicated for improvement decreased by eight from the previous year to 62. Of these, waste-related indications accounted for almost half, at 28.

In response to these indications, improvements were implemented under the ISO 14001 system of each factory. In addition to follow-up confirmation of the status of improvements, they are also subject to review during next year's environmental patrols.

Improvement Items Indicated by Environmental Patrols in FY2001

Category	No. of Items
Waste-related	28
Water quality	15
Chemical substance storage	6
Noise	4
Air	0
Other	9
Total	62

Training Internal Environmental Auditors

In order to raise the levels of internal audits and environmental patrols, Yamaha is putting its energies into training internal environmental auditors based on a standard educational program. In FY2001, 40 Yamaha employees and 130 employees of affiliated companies in Japan acquired internal qualifications as auditors, bringing the total number of qualified auditors in Japan to 430.

Remediation of Soil and Ground Water

Following an administrative report and voluntary disclosure concerning the discovery of chlorinated organic solvent contamination of the soil and groundwater at two factories and one affiliate in November 1998, Yamaha has continuously worked to remediate the soil and groundwater. As a result of these efforts, remediation of the soil was completed in December 2000. Continuous cleaning of ground water (pumping method and activated charcoal filtering) has reduced contamination to one-third or less than the original levels. Cleaning of groundwater will be continued to achieve even better results.



Remediation procedure at the Main Factory

Environment Related Accidents and Litigation

In FY2001, there were no environment related accidents that had an impact outside the company. In addition, Yamaha was not involved in any environment related litigation.

Environmental Accounting

Yamaha introduced environmental accounting in FY1999 as a tool for creating quantitative indices of its environmental activities. This year, too, Yamaha has conducted environmental accounting for the head office manufacturing bases based on the Environmental Accounting Guidelines laid down by the Ministry of the Environment and performed trial calculations with respect to three affiliates. In addition, in FY2001 Yamaha created a system to manage environmental investments based on "goal standards" and began operation of the system in FY2002. Yamaha will work to expand the scope of this system in the future.

FY2001 Environmental Accounting Results

Environmental Costs

Environmental investment in FY2001 was 310 million yen, a year-on-year increase of 50 million yen, and was used for updating waste water treatment facilities, waste sawdust volume reduction equipment, and other items. Environmental investment accounted for 5% of Yamaha's overall investment.

Environmental expenditures were 2.08 billion yen, a year-on-year increase of 330 million yen. Expenditures were for appropriate disposal and recycling of waste, personnel and other expenses related to environmental management.

Research and development costs were 380 million yen, accounting for 1.8% of Yamaha's total research and development expenditures.

Environmental Effects

(1) Environmental Preservation Effects

As a result of investment in energy conservation and strict control of air conditioning temperatures, CO₂ emissions were reduced by 7,576 t-CO₂. In addition, water consumption decreased by 290,000m³, the volume of chemical substances released was down 37 tons, and final waste disposal volume dropped 746 tons.

(2) Economic Effects

As a result of energy conservation activities, utility expenses were cut by 110 million yen. Although waste disposal volume was reduced, an increase in the cost per unit of waste disposed resulted in a 20 million yen increase in waste disposal expenses. In addition, the sale of items that could be recycled for a fee resulted in an income of 20 million yen.

Trial Accounting by Affiliates

In FY2001, environmental accounting figures were calculated for three ISO 14001 certified affiliates as a trial for implementing consolidated environmental accounting. In the future, the scope of consolidated environmental accounting will be gradually expanded to the entire Group.

Yamaha Music Craft Corporation: Hamamatsu, Shizuoka Prefecture: Production of string and percussion instruments
Yamaha Kagoshima Semiconductor Inc.: Kurino-cho, Aira-gun, Kagoshima Prefecture: LSI mass production factory
D.S. Corp.: Fukuroi City, Shizuoka Prefecture: Production of PCBs and audio and telecommunication equipment

Costs and Effects

Scope of accounting: Yamaha Head Office and production factories in Japan

Period: April 1, 2001 - March 31, 2002

Environmental Preservation Costs

(Unit: millions of yen)

Classification*1	Details	Investment*2	Expenses*3
Business area costs	1. Pollution prevention costs	110.6	438.2
	2. Global environmental preservation costs	67.8	50.7
	3. Resource recycling costs	113.1	546.1
	Upstream/downstream costs	4.8	73.6
	Management costs	11.1	561.9
Research and development costs	Development of environmentally considerate products, specifications, etc.	—	375.4
Social activities costs	Social contributions, etc.	1.3	20.4
Environmental damage remediation costs	Groundwater remediation, etc.	0.0	13.7
Total		308.7	2,080.0

*1. Environmental preservation cost categories from the Ministry of the Environment's Environmental Accounting Guidelines (2002 edition.) As of this year, costs related to greening within premises and information disclosure are reclassified from "social contribution costs" to "management costs." In addition, investment in factories and equipment related to research and development is to be recorded as expenditures.

*2. Investment amount refers to investment in factories and equipment made with environmental preservation objectives.

The figure is calculated by multiplying the purchase price by a quantity determined by the proportions of the objectives of purchase (e.g., 0.1, 0.5, 1.0).

*3. Expenses refer to personnel and other costs expended for environmental preservation activities. Personnel expenses are calculated by multiplying the time spent on environmental preservation activities determined by the manager of each department by a common unit. Costs are determined by multiplying the amounts paid externally by a certain quantity as in the case of investment amounts (e.g., 0.1, 0.5, 1.0). Depreciation costs are not included.

Environmental Preservation Effects

Details	Environmental Preservation Effects				Economic Effects	
	FY2000	FY2001	Reduction Volume	(Unit)	Details	Amount (millions of yen)
CO ₂ emissions volume	56,852	49,276	7,576	t-CO ₂	Saving from energy conservation measures	106.8
Water consumption	163	134	29	10,000m ³	Saving from water conservation measures	2.8
Volume of chemical substances released*4	145	108	37	t	—	—
Waste disposal volume	2,369	1,623	746	t	Saving from reduction of waste disposal expenses*5	-20.0
					Income from sale of items recycled for a fee	23.6
Volume of packaging material used in distribution*5	1,465	1,044	421	t	Saving from reduction of packaging material used in distribution	6.6
Copy paper usage volume	2,676	2,266	410	10,000 sheets	Saving from reduction of copy paper usage	4.0
Total						123.8

*4. Chemical substances refers to chemical substances subject to PRTR that are used by Yamaha (approximately 51 substances).

*5. Refers to those packaging materials used in distribution whose usage is systematically being reduced (wood, foam cushions, PVC).

*6. Waste disposal expenses include subcontracting expenses, recycling expenses, and internal interim processing expenses.

Environmental

Preservation Costs (millions of yen)

Classification	Investment	Expenses
Business area costs	53.3	219.3
Upstream/downstream costs	0.0	2.5
Management costs	0.0	39.1
Research and development costs	—	13.4
Social activities costs	0.0	0.6
Environmental damage remediation costs	0.0	0.0
Total	53.3	274.9

Environmental Preservation Effects

Details	Environmental Preservation Effects		Economic Effects	
	Reduction Volume	(Unit)	Details	Amount (millions of yen)
CO ₂ emissions volume	229.5	t-CO ₂	Saving from energy conservation measures	27.6
Water consumption	13.2	10,000m ³	Saving from water conservation measures	-0.2
Volume of chemical substances released*4	3.8	t	—	—
Waste disposal volume	236.5	t	Saving from reduction of waste disposal expenses*5	-3.7
			Income from sale of items recycled for a fee	1.1
Copy paper usage volume	41.9	10,000 sheets	Saving from reduction of copy paper usage	0.1
Total				24.9

Environmental Considerations in the Product Development Stage

Creation of the Yamaha Green Procurement Standard

To continuously reduce the environmental impact of Yamaha products and provide our customers with environmentally considerate products, internal company efforts alone are insufficient. Therefore, Yamaha believes it is essential to properly assess the environmental impact of the parts and raw materials procured from suppliers and work to reduce it.

For this reason, in FY2001 Yamaha created a guideline called the "Yamaha Green Procurement Standard" which spells out the objective, policy, and implementation of green procurement* and includes a list of targeted chemical substances, survey forms, etc.

*Green procurement: Framework for selecting and procuring parts and raw materials to be used in products, based on environmental parameters such as hazardous materials contained and recyclability, in addition to the conventional parameters such as quality, cost, and delivery.

Cooperation Requested of Approximately 200 Suppliers

In June 2002, Yamaha held the Green Procurement Seminar for approximately 200 of its major Japanese suppliers. Yamaha distributed copies of the Yamaha Green Procurement Standard to these suppliers and asked them to fill out a questionnaire related to the chemical substances contained in the parts and raw materials they supply.

The target chemical substances include heavy metals such as lead and ozone-destroying substances such as CFCs, totaling 31 substance groups (approximately 215 substances).



Yamaha Green Procurement Standard



Green Procurement Seminar

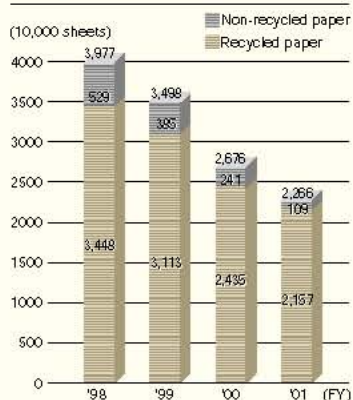
Case Study

Green Purchasing and Reduction of Paper Usage

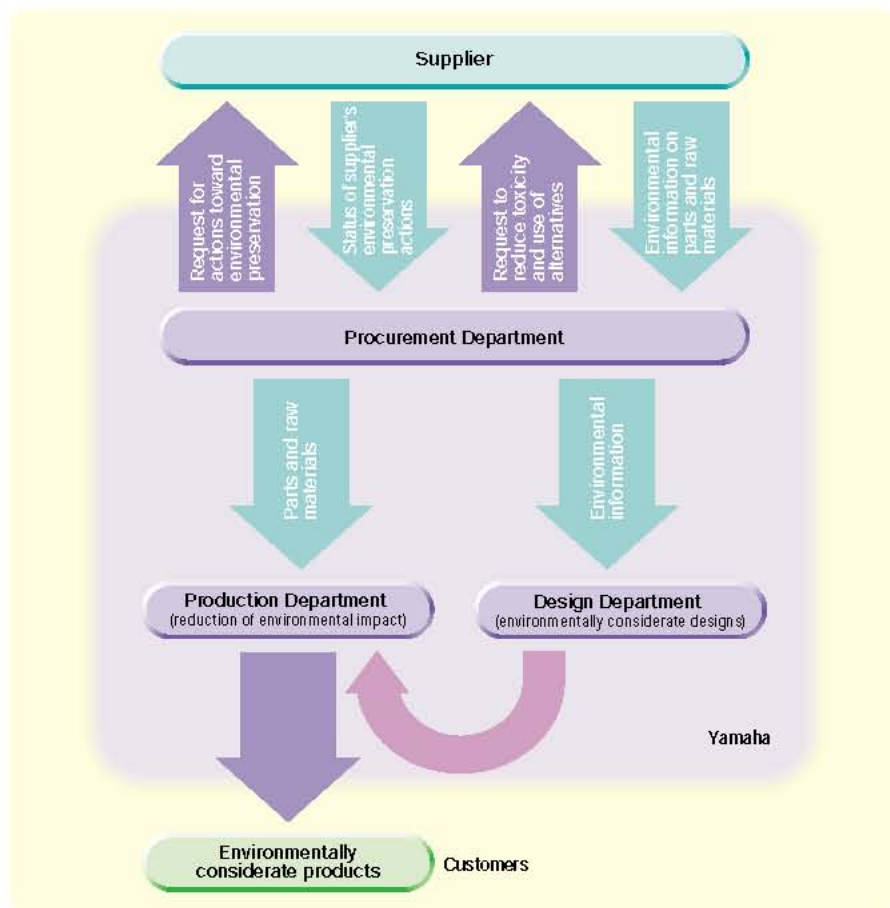
As part of its green purchasing* efforts, Yamaha has been trying to switch to 100% recycled paper. In FY2001, the usage rate reached 95% (up by 4% from the previous year). In terms of total paper usage, Yamaha continued to promote efforts such as the use of electronic notification and e-mail, as well as the use of the reverse side of paper, successfully reducing the total copy paper usage by 4.1 million sheets (down by 15% from the previous year).

*Green purchasing: Purchasing of products and services that have less environmental impact. The Japanese government has mandated green purchasing by enacting the Law on Promoting Green Purchasing.

Copy paper usage



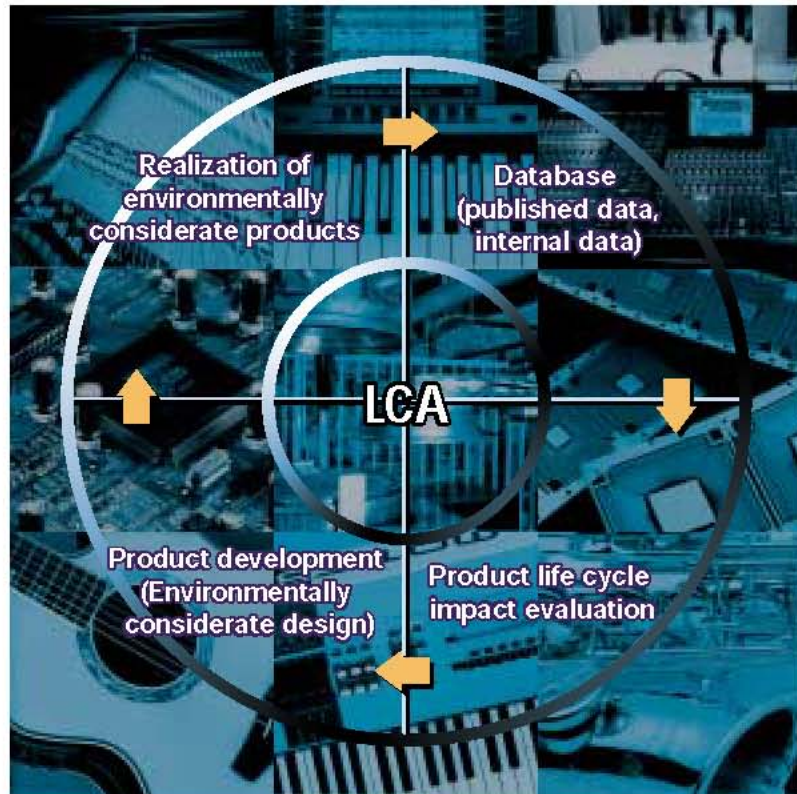
How Green Procurement Works



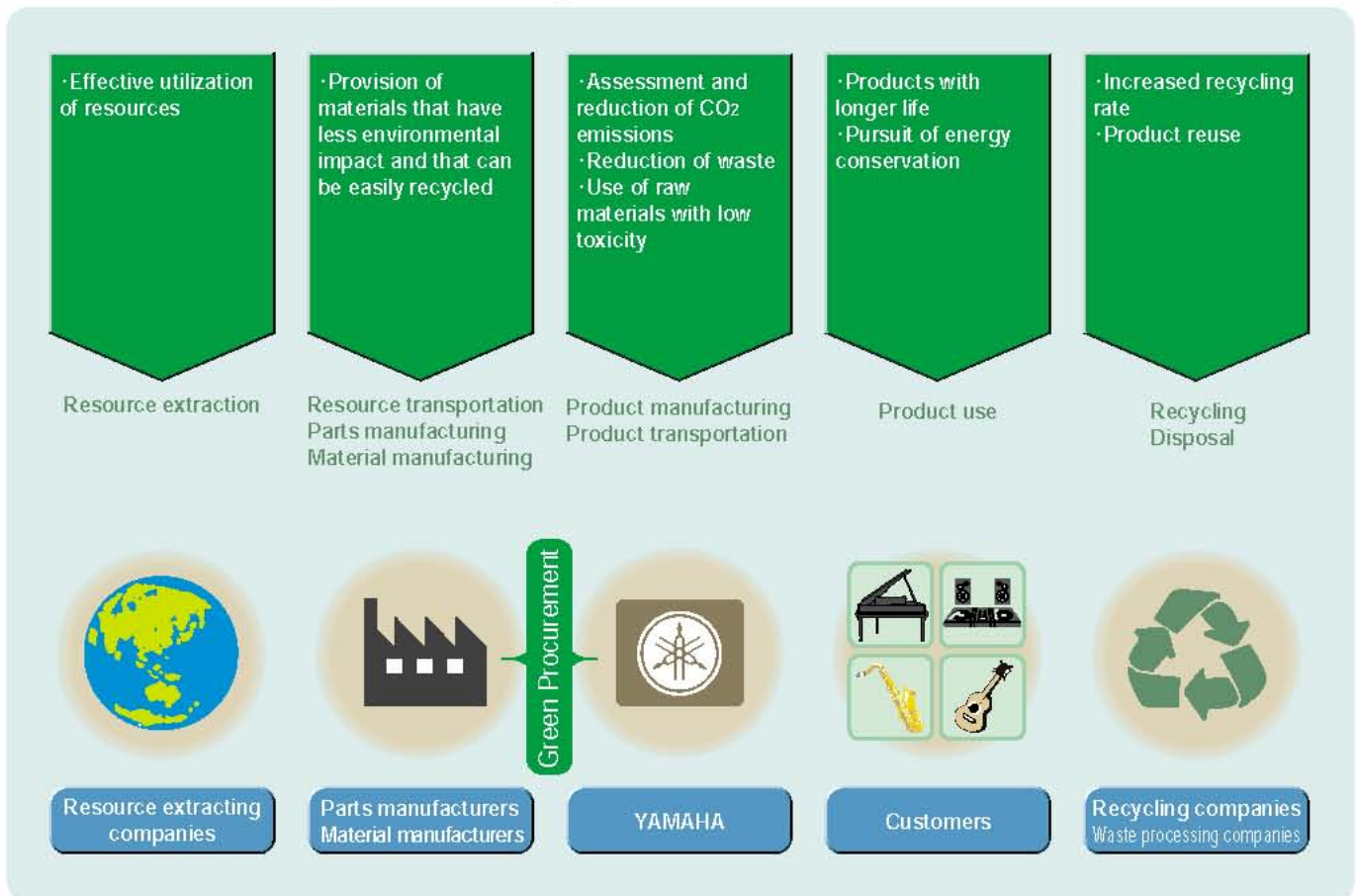
Actions for Achieving Environmentally Considerate Designs

Currently, Yamaha is proceeding with efforts to reduce usage of resources, increase resource recycling and improve ease of waste processing, using its product assessment system. Yamaha is also planning to further promote environmentally considerate designs by fully implementing the LCA (Life Cycle Assessment) methodology. Toward this goal, Yamaha has begun building a database of the environmental impact that is present at all stages of product life cycles. Yamaha's plan to complete LCA evaluation for major products within FY2003 and begin incorporating the results into product designs.

LCA is a method of evaluating the overall environmental effect of a product, by quantifying the environmental impact that the product will have throughout its entire life cycle, i. e. not only at the production and use stages but from the resource extracting stage through the raw material producing stage, to the final disposal stage.



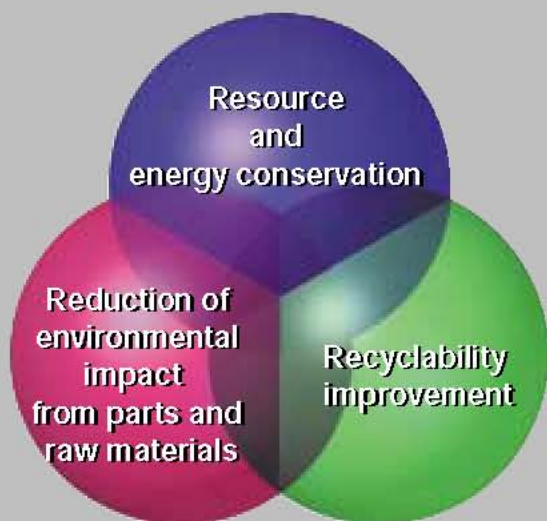
What is an Environmentally Considerate Design?



Resource and Energy Conservation

Reduction in Power Consumption, Standby Power Requirements, and Weight of AV Products

Reducing the power consumption and standby power requirements of AV products is important in terms of reducing CO₂ emissions. So far at each model redesign, Yamaha has been taking steps to reduce the energy requirements of its home theater systems, stereo equipment, and power amplifiers (PA) by improving the efficiency of electronic components, such as LSI chips, decreasing the number of components, and reducing energy loss. For example, the latest major power amplifier (PA) models are approximately 2.6 times more energy efficient and 1/3 the weight of 1990 models.



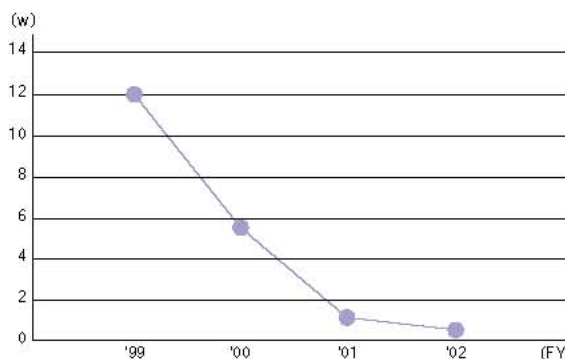
Promoting the Reduction of Environmental Impact from Products, with Three Key Areas Identified

To build a recycle-oriented society, one of the most important responsibilities of a manufacturer is to continuously strive to reduce the environmental impact of its products. As a specific step, Yamaha established three major goals for its product development processes: resource and energy conservation, reduction of environmental impact from parts and raw materials, and recyclability improvement. Progress was made in each of these areas in FY2001.



Home theater system (DVX-S100)

Trend in the Standby Power Requirements of Home Theater Systems

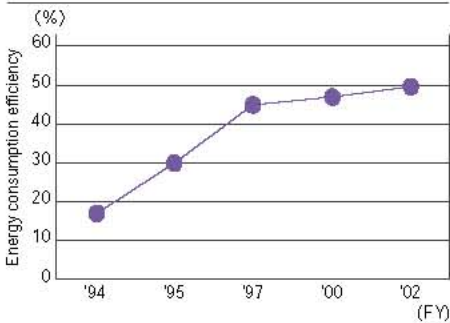




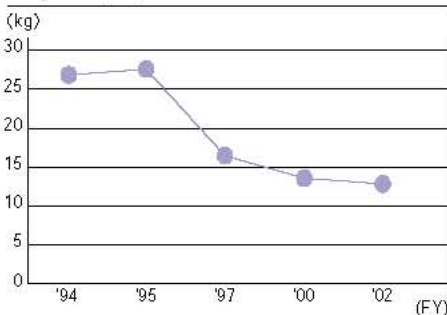
Power amplifier (PA) PC-9500N

Energy Efficiency Trend in Major Power Amplifier Models

*Efficiency is calculated based on safety standards.
(Calculated from the power consumption and output power at 1/8 the maximum output.)



Trend in the System Weight of Major Power Amplifier (PA) Models



Trend in the Performance of Major Power Amplifier (PA) Models

Fiscal year	Model	Output	Power consumption	Efficiency	Weight
1990	PC4002	700W*2	800W	19.0%	43kg
1993	PC3000	450W*2	700W	17.6%	19.5kg
1994	P3500	620W*2	1,000W	18.0%	26kg
1995	PC7500	1,000W*2	850W	30.0%	27kg
1997	P4500	720W*2	439W	44.9%	16kg
2000	CP2000	650W*2	367W	47.0%	14kg
2002	PC9500N	1,568W*2	784W	50.0%	13kg

*Efficiency is calculated based on safety standards.
(Calculated from the power consumption and output power at 1/8 the maximum output.)

Reducing Paint Usage in Acoustic Guitars

Yamaha Music Craft and Kaohsiung Yamaha (Taiwan), which handle the painting of acoustic guitars, have adopted ultraviolet (UV)-curing adhesives in their painting processes, thereby reducing paint usage and lowering the emission of solvents into the atmosphere by 15% or more.



Acoustic guitar (FG-522SJ)



Painting process

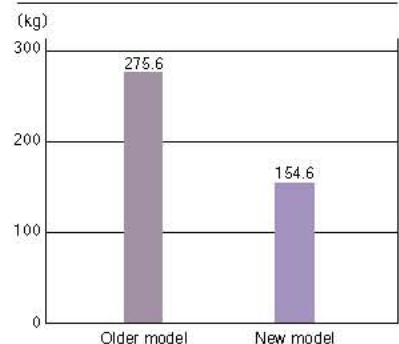
Achieving Significant Reduction in Resource Usage and Weight of Soundproof Chambers

Yamaha switched the materials used for the walls and ceiling of the soundproof chamber Avitecs (Mini type) from wood particle board to cultivated paulownia wood. By adopting a unique modified absorption system, Yamaha has reduced the deformation caused by moisture and temperature fluctuations that is characteristic of natural wood, and reduced the weight of the chamber by approximately 40% compared to the previous model.



Avitecs (Mini type)

Weight Comparison Between New and Older Avitecs Models



Reduction of Environmental Impact from Parts and Raw Materials

Complete Elimination of Chromium Oxide in the Painting of Wind Instruments

Yamaha had been using a chemical containing chromium oxide for the primer in the painting process for wind instruments. However, Yamaha began reducing the usage of chromium oxide in FY1999, and, by the end of FY2001, succeeded in completely eliminating it from the primer in the painting process at all of the wind instruments painting factories.



Alto-saxophone (YAS-875WX)

Efforts to Eliminate Lead from Solder

As the highest-priority issue for its Improvement Committee, Assembly Technology which also involves affiliated companies, etc., Yamaha began working on eliminating lead from the solder used for printed circuit boards. Yamaha set up a verification line and is continuing commercialization evaluation. As for the LSI chips and lead frames being produced by Yamaha Metanix Corporation, a system is already in place to supply lead-free versions of these products.



Printed circuit board



Flow soldering system in the verification line



Re-flow soldering system in the verification line

Recyclability Improvement

Improving the Recyclability of Keyboards

Addressing the ease of processing end-of-life products in the designing process, leads to improved recyclability. As part of this effort, Yamaha worked on eliminating grease from its porta-tones. Traditionally, Yamaha had been using key guides (parts) and a lubricant (grease) under the keyboards of porta-tones in order to ensure smooth key operations. However, this grease must be cleaned off during the process of recycling the keyboards, requiring an extra step. Therefore, Yamaha made a structural change that prevents the keys from moving sideways, thus eliminating both the key guides and the grease.



Porta-tone (new design used in 9 models)



Conventional type:
Grease is applied to the key guides under the keys



Improved type:
Key guides and grease have been eliminated

Improving the Dismantlability of Routers

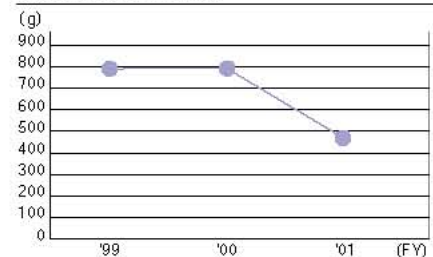
Yamaha improved the dismantlability during recycling of its relays (routers*) used for broadband, high-speed data transmission. This was accomplished by reducing the number of printed circuit boards needed through an increase in the LSI integration level, and reducing the number of screws used (from 18 in 1999 to one in 2001).

*Routers are relays used in networks, which transmit data through channels that they determine to be most efficient for the receiver of data.

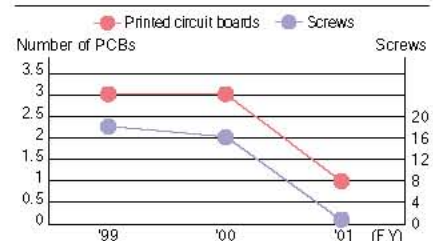


Routers (RA54i and 55i)

Trend in the System Weight of Major Router Models



Numbers of Printed Circuit Boards and Screws used in Major Router Models (excluding the printed circuit boards in the power supply)



Environmental Considerations in the Production Stage

Prevention of Global Warming and Energy Conservation

As a result of promoting energy conservation measures, such as the introduction of high-efficiency air-conditioners, strict control of air-conditioner temperatures, and the conversion of compressors to inverters, Yamaha was able to reduce CO₂ emissions to 49,276 tons in FY2001, down by 7,576 tons from the previous fiscal year. This reduction translated into a 5.3% improvement over the previous year in terms of reductions per unit of sales*. For example, the Tenryu Factory introduced an outside air latent heat processing system, which cools the outside air using the process of water vaporization before sending it into the factory, thus achieving efficient air-conditioning.

Yamaha's affiliated companies have also been taking active steps. For example, Yamaha Metanix Corporation installed a cogeneration system (with a 2,000 kWh output) and converted its existing electrical generation system to a cogeneration system (with a 2,000 kWh output).

*Reductions per unit of sales: CO₂ emissions per 100 million yen of sales. This value decreases as energy use efficiency improves.

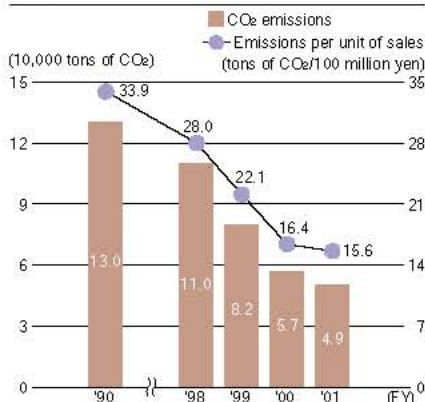


Outside air latent heat processing system that produces higher-efficiency air-conditioning (Tenryu Factory)



Newly installed cogeneration system (Yamaha Metanix Corporation)

CO₂ Emissions Per Unit of Sales



Reuse of Water and Leakage Prevention

In terms of water consumption, Yamaha has long been reusing the water discharged from its processes. For example, the Toyooka Factory is reusing 360 m³ of water per day discharged from the wind instrument production process, after removing impurities using a reverse osmosis membrane (RO membrane) system*. Similar steps are also being taken at the Saitama Factory and the Main Factory (in Niitsu).

In FY2001, Yamaha took water-conservation actions, including the implementation of well-water leakage prevention measures (early corrosion detection and improvement in ease of repair) by moving underground tanks and pipes aboveground, and as a result, reduced its water consumption by 290,000 m³ from the previous year to 1.34 million m³.

*Reverse osmosis membrane (RO membrane) system: System that filters out impurities, ions, bacteria, germs, etc. from the source water using a reverse osmosis membrane, separating it into treated water and condensed water.

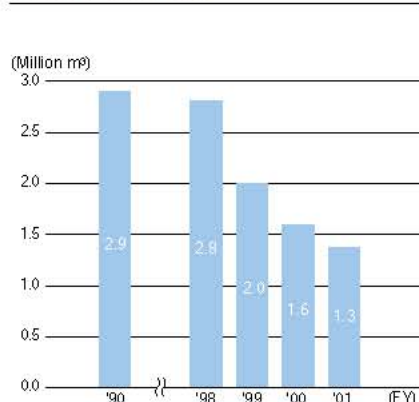


RO system (Toyooka Factory)



Aboveground tank for well water (Toyooka Factory)

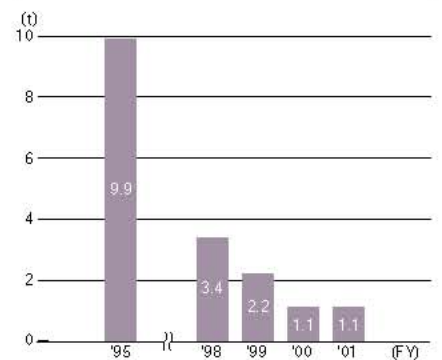
Water Consumption



Reduction of Alternative Fluorocarbons

In order to help protect the ozone layer, Yamaha completely eliminated the use of CFCs in FY1993. We have also been reducing the usage of substitute fluorocarbons used in the degreasing process for metal materials. As a result, the usage for 2001 has gone down to 1.1 tons, an 89% reduction from the level in 1995. Yamaha is continuing to establish technologies that will enable it to switch to alternative materials that have less impact on the ozone layer and contribute more to the prevention of global warming.

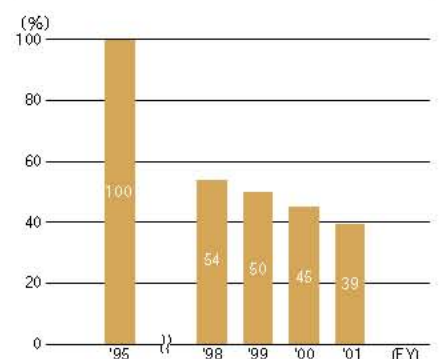
Substitute CFC Usage Volumes



Reduction of Formaldehyde Release Volumes

In FY2001, Yamaha reduced atmospheric release of formaldehyde, a harmful air-pollutant that Yamaha is trying to reduce voluntarily, to 39% of the FY1995 level by taking steps such as improving the method of its usage in gluing processes. Yamaha's goal is to reduce formaldehyde release by 64% by FY2003 through continued promotion of the use of low-formaldehyde materials.

Formaldehyde Release Volumes (%)



Compliance with the PRTR Law

Yamaha used 51 of the substances subject to PRTR in its production factories in Japan in FY2001, and the total volume handled was 376 tons. Of this total, 29% was released into the environment, 2% was transferred as waste, and 69% was either consumed or incorporated into products.

Providing MSDS* in accordance with the PRTR Law* led to the sequential disclosure of substances that had not previously been disclosed, and increased the reported number of substances (subject to the PRTR Law) being used at Yamaha by 22 from the previous fiscal year. The volume of substances discharged into the atmosphere went down by 26% from 145 tons in the previous year to 108 tons. This reduction was achieved by adopting less toxic alternatives to raw materials containing substances subject to the PRTR Law and by making improvements to and simplifying the way raw materials are used in various processes.

Yamaha will continue to reduce usage of the substances subject to the PRTR Law and promote switching to less toxic alternatives, as well as reduce the discharge into the environment by, for example, installing scrubbing facilities.

*PRTR Law: Law to promote the determination of the volume of designated chemicals being released to the environment and improvement of their control (also known as Chemical Substance Control Promotion Law), enacted in 2001. PRTR = Pollutant Release and Transfer Register

*MSDS: Material Safety Data Sheet. Data sheet on the safety of chemical substances. This document is one of the means for safely controlling chemical substances and includes information such as the substance name, physical and chemical characteristics, toxicity, and handling precautions.

PRTR Results (FY2001)

Data gathered from Yamaha's production factories in Japan

Class 1 designated chemical substance No.	Substance name	Volume handled	Volume discharged				Volume transferred		Other
			Volume discharged into atmosphere	Volume discharged into waterways	Volume discharged into soil	Volume buried inside sites	Volume transferred to sewage	Volume transferred as waste material	
177	Styrene	300.9	55.8					1.9	243.2
227	Toluene	36.0	36.0						
63	Xylene	12.8	12.8						
232	Nickel compounds	3.6						0.6	3.0
68	Chromium and trivalent chromium compounds	2.9						2.9	
310	Formaldehyde	2.4	0.1						2.3
231	Nickel	2.3							2.3
40	Ethylbenzene	2.0	2.0						
283	Hydrogen fluoride and its water-soluble salts	1.8							1.8
69	Hexavalent chromium compounds	1.6							1.6
108	Inorganic cyanides (excluding complex salts and cyanates)	1.6							1.6
64	Silver and its water-soluble compounds	1.4							1.4
270	Di-normal butyl phthalate	1.2						0.7	0.5
181	Thiourea	1.1						0.1	1.0
144	Dichloropenta-fluoropropane: HCFC-225	1.1	1.0					0.1	
230	Lead and its compounds	1.0						0.1	0.9
	35 other substances	2.6	0.6	0.1			0.3	0.1	1.5
	Total	376.3	108.3	0.1	0.0	0.0	0.3	6.5	261.1

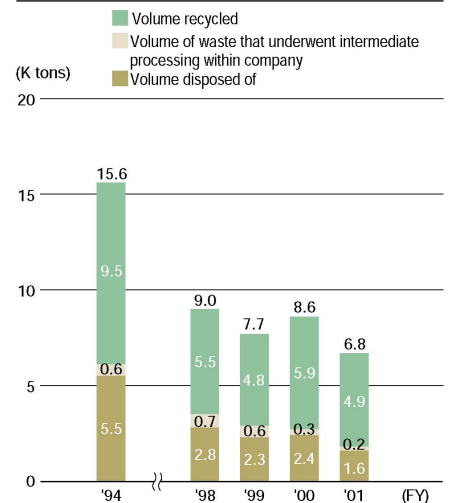
Reduction and Reutilization of Waste Materials Generated by Factories

Factories generate various types of waste, such as foundry sand waste and slag (generated in metal refining processes) from piano frame production, and sludge and glass scrap from wind instrument production, as well as ordinary sewage sludge and waste solvents. Each factory is trying to reduce waste disposal volumes by recovering some of the waste as pavement materials, raw materials for cement and ceramic industries, fertilizers, etc.

As a result, the volume of waste generated in FY2001 decreased by 1,808 tons from the previous year to 6,763 tons. The resource recycling rate increased by 3% from the previous year to 72% (4,898 tons), and the waste disposal volume decreased by 746 tons from the previous year to 1,623 tons.

Operation of waste incinerators at all of Yamaha's production factories in Japan was stopped in FY2001.

Volume of Waste Disposed of and Volume Recycled



Case Study

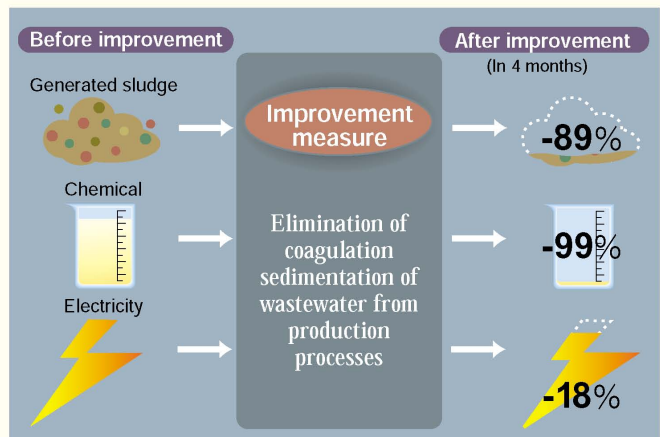
Significant sludge reduction

The Kakegawa Factory, which produces upright pianos, treats part of the wastewater generated in its production processes together with ordinary sewage. The wastewater from production processes used to be coagulated and sedimented* using a chemical and then put through an activated sludge process* together with ordinary sewage. The resulting sludge was then incinerated (recovering its thermal energy) and finally disposed of in a landfill.

However, by using microbial activation and adjusting the balance between wastewater from production processes and ordinary sewage, the factory eliminated the coagulation sedimentation process. As a result, the factory was able to reduce the volume of sludge generated in four months by 89% or 5.7 kiloliters. At the same time, the factory was able to reduce chemical usage by 4.0 kiloliters (99%) and electricity usage by 6,000 kWh (18%).

*Coagulation sedimentation: Process of sedimenting and separating out micro particles widely dispersed in sewage water, by forcibly increasing their size using a chemical.

*Activated sludge process: Process of oxidizing and breaking down the organic substances in sewage water through the action of aerobic bacteria.



Environmental Considerations in the Packaging and Distribution Stage

Attempt at Assessing the Environmental Impact of Distribution





Yamaha relies almost exclusively on outsourced transportation companies for its distribution needs. However, in order to reduce the overall environmental impact by Yamaha, its Distribution Division began to assess the existing situation in 2001 in cooperation with transportation companies.

The total transportation volume in Japan*¹ in FY2001 was 33 million ton-kilometers*² (equivalent to 8,000 tons in CO₂ emissions). Although the main mode of transportation used is trucks, Yamaha has been trying to reduce the environmental impact of its transportation needs by switching to trains (actual volume of 600,000 ton-kilometers) and ferries (actual volume of 3.2 million ton-kilometers) for transportation over long distances of 700 km or more. Yamaha is also improving its transportation efficiency by consolidating inter-factory transportation,

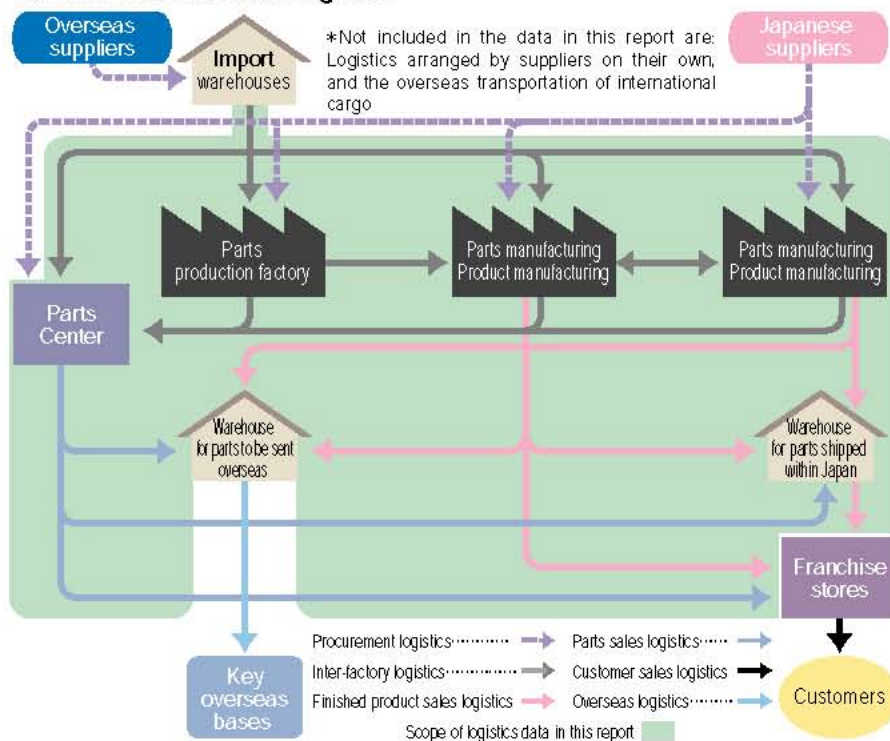
and is working to reduce CO₂ and NO_x emissions by establishing inter-factory transportation guidelines, ensuring, for example, that drivers stop their engines when their trucks are parked.

*¹Total transportation volume in Japan: Includes Yamaha's inter-factory transportation, distribution of finished products and parts for sale in Japan, and the transportation of international cargo within Japan.
*²Ton-kilometers: Total of transportation weight (tons) x transportation distance (kilometers).

Total Transportation Details for Distribution

Short/medium-distance transportation		(10K tons-kilometers)
Trucks		2,910
Long-distance transportation		
Trains		60
Ferries		320
Airplanes		10

Yamaha's Distribution Logistics



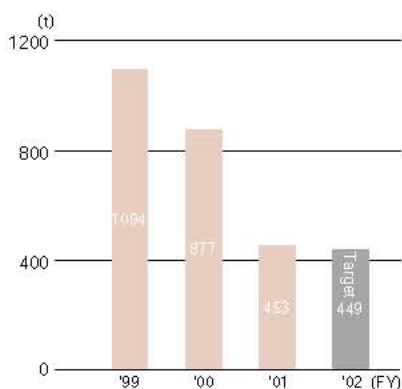
Finding Alternatives for and Reducing Packing Materials

As for packing materials, Yamaha has switched the wooden skids used for grand pianos to be exported to reinforced corrugated cardboard, has eliminated wooden packing materials for Clavinovas, and has begun reusing wooden skids in Japan. As a result, Yamaha achieved an early 58.6% reduction in FY2001 against the goal of a 59% reduction (from the FY1999 level) by FY2002.



Packing consisting entirely of corrugated cardboard

Wooden Packing Material Usage



Case Study

Example of environmental impact reduction in logistics Pelletizing and the Reuse of Sawdust

Yamaha compresses the sawdust generated in its manufacturing processes and converts it into pellets. This volume reduction improves the loading efficiency per truck, and reduces the number of shipments (i.e., CO₂ emissions). The pellets are utilized as fuel, thus recovering their thermal energy.



Sawdust pelletizing system (Kakegawa Factory)

Case Study

The ideal in environmentally considerate packing for more than 40 years Packing Grand Pianos in Quilts

In order to reduce the usage of wood and other packing materials, in 1960 Yamaha developed a simplified method of packing grand pianos shipped within Japan in quilts. These quilts are washed after use and reused many times, and produce no trash at customer sites. This is one of the environmentally considerate packing methods that has been in use at Yamaha for more than 40 years.



Grand piano packed in quilts (for shipment within Japan)

Environmental Communication

Yamaha has sought to communicate with local communities and society at large through active information disclosures and is committed to reducing environmental impact. Yamaha periodically publishes an environmental report, discloses information on its website, promotes communication with local residents and reflects their opinions in its activities.

Publication of Environmental Reports

Yamaha published an environmental report in October 2000 and a compilation of environmental data in September 2001. Since FY2001, information concerning the activities of and environment-related data from some affiliates has been included and the scope of the report has been expanded to include the entire Yamaha Group.



Environmental Report (published in FY2000) Environmental Data Compilation (published in FY2001)

Information Disclosures on the Web

The section of Yamaha's Website entitled "Yamaha's Environmental Preservation Activities" includes environmental reports, the environmental data compilation, and summaries of green procurement. In FY2001, the site received 6,200 hits.



Main page of the Environmental Preservation Activities site
<http://www.yamaha.co.jp/>

Environmental Corner Created on Site Tour

Yamaha has, within its Main Factory in Hamamatsu City, a Yamaha Showroom to introduce its products and corporate activities to visitors and guests. The showroom serves as the starting point for tours of the factory. In September 2001, an Environmental Corner was created within the showroom to explain Yamaha's environmental initiatives through panel displays and other information sources.



Environmental Corner

Questionnaire Responses and Opinions

Yamaha received 64 responses to the questionnaire included in the Environmental Data Compilation published in FY2001. The questionnaire responses were as follows:

- How easy to understand was the content of the Environmental Data Compilation?
 - Easy to understand..... 72%
 - Average..... 26%
 - Difficult to understand..... 2%
- What is your evaluation of Yamaha's environmental activities?
 - Worthy of praise..... 84%
 - Average..... 14%
 - Not worthy of praise..... 2%

Some representative opinions and impressions provided by respondents are indicated below.

- I thought that the company's measures concerning packaging materials and waste are wonderful.
- I would like to know about restoring and recycling information concerning products other than pianos.
- I would like more information concerning environmental data from overseas factories.

Yamaha will reflect these valuable opinions in its future environmental activities and also in future environmental reports and other documents.

The volume of foam cushions (polystyrene foam and polypropylene foam) increased by 3.8% in FY2001 as a result of an increase in the volume of products shipped and the sale of product sets despite a goal of 27% reduction compared to FY1999 levels by 2002.

As a result of concerns about the emission of dioxin when PVC packaging materials are combusted, Yamaha set goals of reducing them by 68% by FY2002 (compared to FY1999 levels) and completely eliminating them in products intended for consumers. In FY2001 a reduction of 61% was achieved.

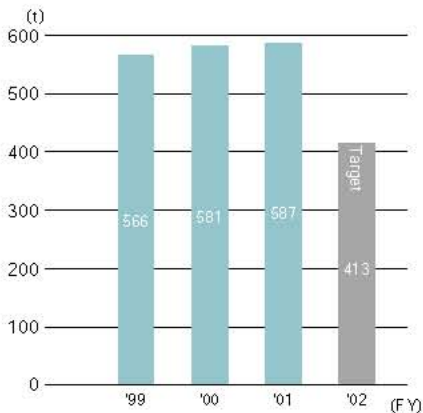
Under the Law for Promotion of Effective Utilization of Resources, the use of marks to identify packaging materials, such as "paper" and "plastic," was started in FY2000. Material labeling was also included on plastic packaging materials.



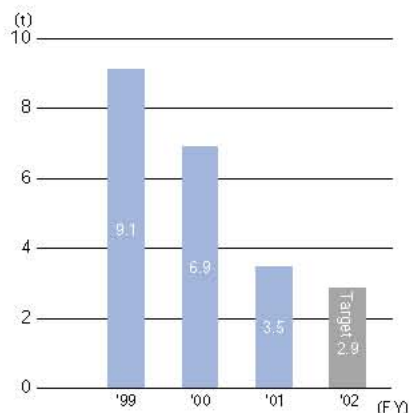
Uniform labels on cardboard boxes

Uniform labels on containers

Volume of Foam Cushion Materials Used



Volume of PVC Packaging Materials Used



Social Contribution

Environmental preservation activities require companies, government, and individuals to join forces and cooperate. Yamaha's "Promise to Society", in its corporate principles, explicitly states that Yamaha will contribute "as a good corporate citizen to the social, cultural and economic development of global society." Based on this policy, Yamaha is continually engaged in promoting social contribution activities.

Donation of Used Musical Instruments to Children Around the World

In FY 2001, following calls to employees to gather Pianicas that were lying unused in homes, 51 units were donated to children in Nepal through International NPO Aiueo Circle Association Japan (ACA Japan).



Children shout with joy at the sound of the Pianica.

Also, since FY1999 Yamaha has donated Pianicas and recorders to children who have been emotionally harmed as a result of strife and war through the Kids Earth Fund (KEF), a non-profit international private support group. In FY2001, Yamaha donated a total of 100 Pianicas, recorders and other instruments to children in Cambodia and other countries.

Effectively Using Discarded Materials

Discarded materials generated during the production processes at the Kakegawa Factory, which produces pianos, were provided to the Tsukiminosato Workshop Center, a lifetime educational facility that opened in March 2001 in Fukuroi City. The students use the materials to practice handicrafts and for art objects. Discarded materials are similarly provided to children in the local community for handicraft use.



A handicraft workshop held during summer vacation



Art works created with discarded materials

Local Clean-up Activities

In conjunction with Environment Month each year, employees at each factory conduct "Local Clean-up Activities." In FY2001, 908 persons participated and gathered approximately 5 tons of waste.



Clean-up Activity at Lake Hamana

Case Study

Contributing to Society through Environmental Technology

In 1999, Yamaha launched the ES (Eco Service) Promotion project, a specialty environmental consulting service, so that the environment-related knowledge and technology that it has developed through its corporate activities over many years can be made useful to society at large. The service provides ISO 14001 expertise and support for construction of environmental management systems mainly to businesses and local governmental bodies in Shizuoka Prefecture, from both infrastructure and personnel perspectives, based on Yamaha's environmental technologies developed through extensive experience in product manufacturing including pianos, electronic musical instruments, and semiconductors. To date, more than 40 consulting projects have been carried out.



A scene from a seminar



Environmental consulting

Environmental Data on Yamaha's Production Factories in Japan

Scope : Yamaha Head Office and all production factories in Japan (excluding affiliated companies within the site)
Period : April 2001 - March 2002



Main Factory (Hamamatsu, Shizuoka)

Number of Employees:2,900
Site area :252,600m²
Business : Grand pianos, audio and
information technology equipment,
digital musical instruments,
string and percussion instruments

Water consumption	205,000	m ³
Discharge volume of substances subject to PRTR	14.4	t
Waste disposal volume	1,490	t
CO ₂ emissions volume	10,400	t-CO ₂
Acquisition of ISO 14001 certification	February 2001	



Iwata Factory (Iwata, Shizuoka)

Number of Employees:60
Site area :48,840m²
Business :Piano frames

Water consumption	92,000	m ³
Discharge volume of substances subject to PRTR	7.3	t
Waste disposal volume	840	t
CO ₂ emissions volume	6,200	t-CO ₂
Acquisition of ISO 14001 certification	March 1999	



Toyooka Factory (Toyooka-mura, Iwata, Shizuoka)

Number of Employees:1,300
Site area :184,197m²
Business : Wind instruments,
digital musical instruments,
semiconductors,
electronic parts

Water consumption	733,000	m ³
Discharge volume of substances subject to PRTR	2.5	t
Waste disposal volume	1,170	t
CO ₂ emissions volume	13,700	t-CO ₂
Acquisition of ISO 14001 certification	June 2000	



Kakegawa Factory (Kakegawa, Shizuoka)

Number of Employees:600
Site area :222,410m²
Business :Upright pianos

Water consumption	65,000	m ³
Discharge volume of substances subject to PRTR	41.2	t
Waste disposal volume	1,540	t
CO ₂ emissions volume	6,800	t-CO ₂
Acquisition of ISO 14001 certification	November 1998	



Tenryu Factory (Hamamatsu, Shizuoka)

Number of Employees:750
Site area :225,801m²
Business : Automobile interior components
and fittings,
soundproof rooms,
golf products

Water consumption	153,000	m ³
Discharge volume of substances subject to PRTR	42.1	t
Waste disposal volume	1,340	t
CO ₂ emissions volume	10,600	t-CO ₂
Acquisition of ISO 14001 certification	March 2001	



Saitama Factory (Ooi-cho, Iruma, Saitama)

Number of Employees:200
Site area :18,602m²
Business :Wind instruments

Water consumption	93,000	m ³
Discharge volume of substances subject to PRTR	0.8	t
Waste disposal volume	380	t
CO ₂ emissions volume	1,700	t-CO ₂
Acquisition of ISO 14001 certification	September 1999	



YAMAHA CORPORATION

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