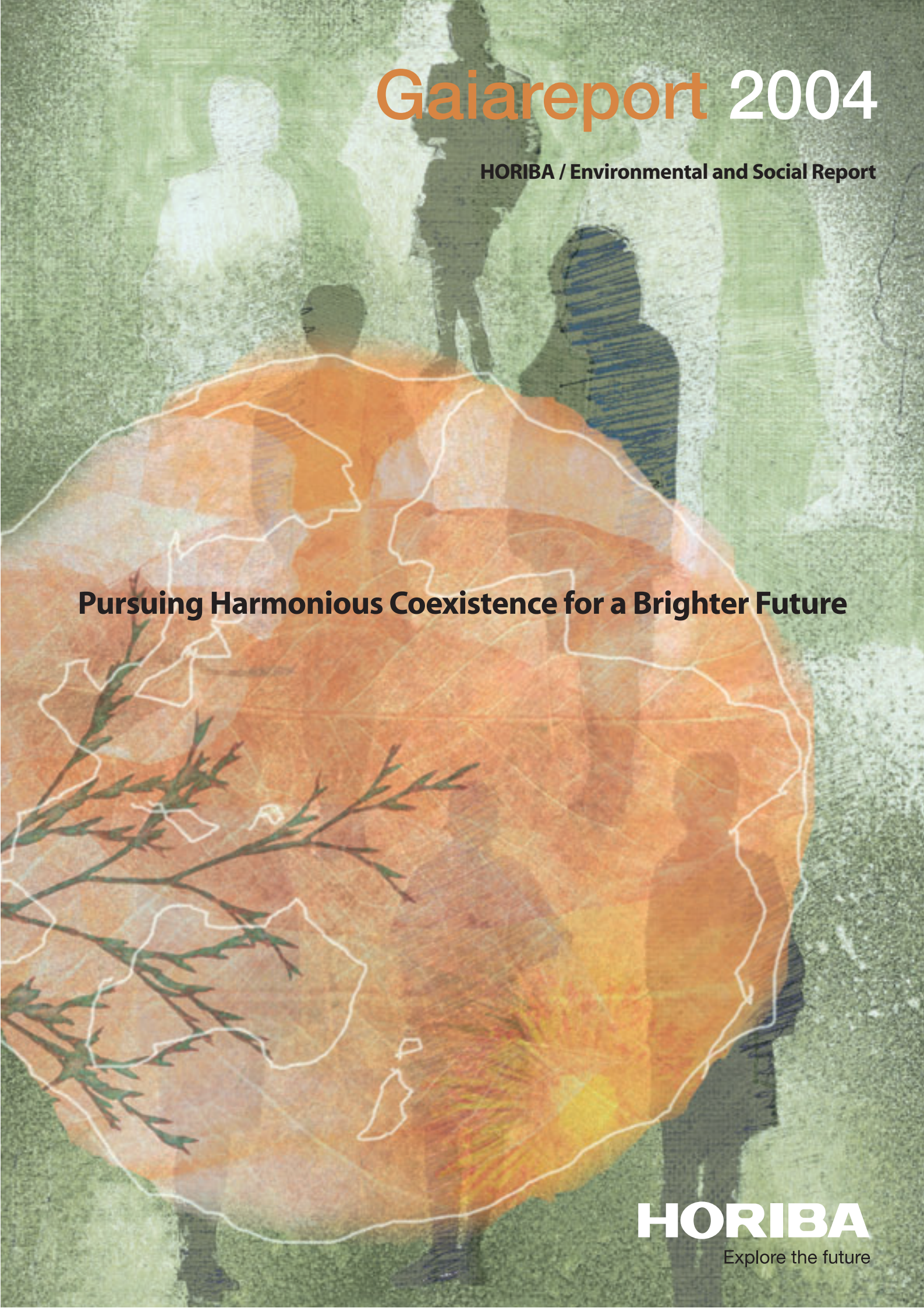


Gaiareport 2004

HORIBA / Environmental and Social Report

Pursuing Harmonious Coexistence for a Brighter Future

HORIBA

Explore the future

Profile

Company Outline (As of March 20, 2004)

Corporate Name:
HORIBA, Ltd.

Head Office:
2, Miyanohigashi-cho, Minami-ku, Kyoto, 601-8510, Japan

Founded:
October 17, 1945

Incorporated:
January 26, 1953

Paid-in Capital:
¥7,160 million

Employees:
Consolidated 3,808; Unconsolidated 1,049

Fiscal Closing Date:
March 20, annually

Stock Listings:
Tokyo Stock Exchange (1st Sector), Osaka Securities Exchange (1st Sector)

Line of Business:
The Company manufactures and sells a wide range of scientific analyzers, engine emission analyzers, environment-monitoring equipment, analyzers and fluid meters for the semiconductor industry, and medical analyzers. We also manufacture and market peripheral measuring and analysis instruments, and devices for the construction industry.

Editorial Notes

- This new Environmental and Social Report covers HORIBA's environmental activities, including aspects of quality, health and safety in our integrated management system (IMS).
- The Report outlines company efforts focused on increasing the well-being of society from the perspective of ethics, human resources, employment and social contribution.
- The Japanese Ministry of the Environment Environmental Report Guidelines (2003 version) were used in the preparation of this report.
- Results cover HORIBA, its Head Office, Head Factory, Domestic Sales Offices, Horiba Techno Service, Ltd. and Domestic Service Stations (expanded to 22) for fiscal 2003 (March 21, 2003 to March 20, 2004).

Note that certain environmental activities conducted in fiscal 2004 are also included.

- Homepages:
- Environmental protection activities http://global.horiba.com/about/environment/
- Investor relations http://global.horiba.com/ir/
- SENSORIUM http://global.horiba.com/sensorium/

Quality, Environment & Safety Management Center

Contents:

Business Outline

The HORIBA Group, founded in 1945, has been supplying the world with high-quality, high-performance analysis and measuring instruments using state-of-the-art technologies.

Over the years, beginning with the nation's first glass-electrode pH meter, Horiba has provided analyzers to monitor air pollution, automotive exhaust emission analyzers and a wide variety of other analytical equipment with the precision measurement capabilities to quantify the global environmental protection needs of the time. Our support for our customers' business in each of these areas has driven expansion and growth for the HORIBA Group.

Our customers' support to HORIBA, in their fields, has driven expansion and growth for the HORIBA Group.

Our manufacturing, analytical and measurement systems business consists of four operating segments.

In Engine Measurement Instruments & Systems, we anticipate future global regulations will increase the demand for automotive exhaust emission analyzers as our environmental conservation efforts are stepped up. We will strive to reduce the environmental burden with R&D instruments for fuel cells and new engines fueled with clean burning Hydrogen.

In Environmental and Analytical Instruments & Systems, we develop a wide variety of solid, liquid and gas analyzers, ranging from air pollution monitoring equipment to elemental analyzers such as X-ray analytical microscopes. Our product strategy caters to the detailed environmental requirements of individual countries.

In Medical/Diagnostic Instruments & Systems, we primarily manufacture high-speed, high-precision blood testing and analyzing equipment, which are vital tools in the medical industry. We pursue global expansion in this segment by entering new markets and developing large-scale equipment together with ABX S.A. of France.

In Semiconductor Instruments & Systems, we manufacture and market equipment that supports production quality control and new materials R&D. We also supply additional, cutting edge products through leveraged ties with Group companies inside and outside Japan.

We utilize the technologies, human resources and expertise contained in each of these business segments to maximize strengths and minimize weaknesses. Using our philosophy and behavioral guidelines, we work to improve operations, enhance the wellbeing of society and improve the world in which we live.

Company Precept

Joy and Fun

Corporate Philosophy

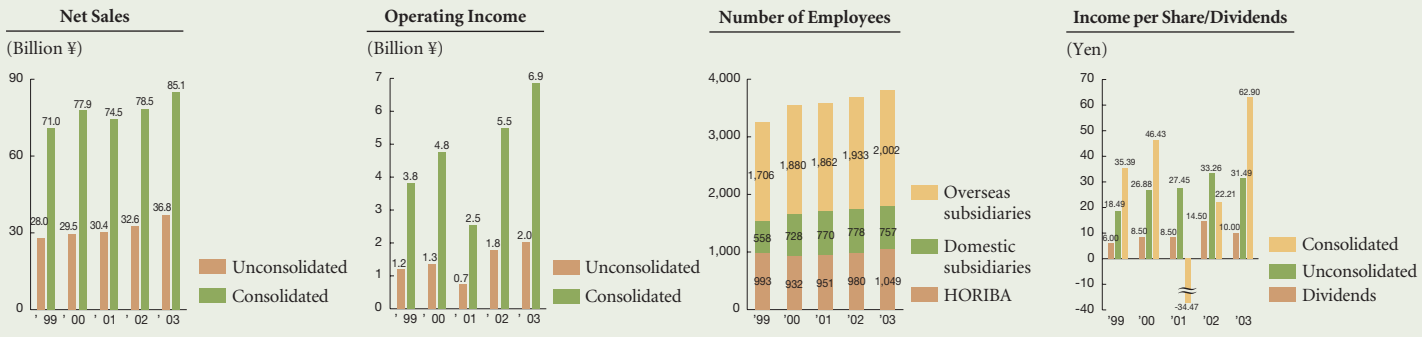
To constantly broaden our horizons to ensure a prosperous future for all

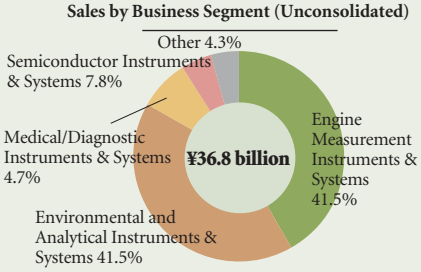
- Promoting the protection of our earth and coexistence with the natural environment

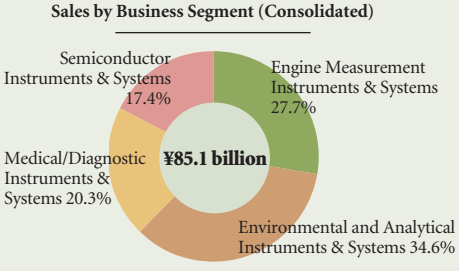
Behavioral Guidelines

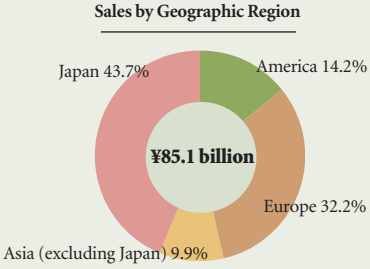
1. Be responsive to customer needs
2. Pursue technology to the ultimate degree
3. Always challenge
4. Be unique
5. Promote active communication

Five-Year Summary









President's Message

Protecting the Environment and Fulfilling Social Responsibility

HORIBA celebrated 50 years in business in January 2003. Starting the next 50 years in style, we posted a record financial performance in fiscal 2003. Since our founding, we have grown with the support of our stakeholders – customers, shareholders, affiliates, regional communities and employees. We are proud to make equipment that can analyze or measure solids, liquids and gases to help protect the environment. I would like to take this opportunity to express my sincerest gratitude for your support and guidance as we stride forward into the next era for HORIBA.

Towards a Century of New Environmental Significance

Both corporate and social environments have changed since the latter half of the 20th century. Rapid advancements in information technology have spurred economic and market expansion, leading to corporate globalization.

In turn, this growth has exacerbated and enflamed environmental problems. Effective resource utilization, prevention of global warming and reduction of harmful chemicals have become urgent requirements to ensure sustainable development.

New regulations enacted to help achieve these goals include Restriction of the Use of Certain Hazardous Substances (RoHS Directive) in electrical and electronic equipment and in End of Life Vehicles (ELV Directive) in Europe.

HORIBA develops analytical and measuring instrumentation with the objective of reducing the impact of harmful emissions on the environment.

1. Promotion of Green Procurement

Corporate entities are obliged to promote "green management" and comply with harmful substance regulations. HORIBA supplies elemental analyzers such as the XGT and the ICP to help organizations identify and reduce the use of these substances.

As HORIBA Group products are used the world over, we actively practice "green procurement," while ensuring the nonuse of prohibited substances in line with local regulations.

2. Reducing CO_2 to Curb Global Warming

Abnormal weather patterns brought on by global warming have sprung up around the world, causing a multitude of problems. If left unchecked, the global warming impact on the natural ecosystem of flora and fauna, as well as on the global economy and energy supply will be enormous. We seek to cut CO_2 levels by conserving energy and resources, reducing power consumption and waste, promoting product reuse and recycling as we expand our range of environment-friendly products.

Pursuing Harmonious Coexistence for a Brighter Future

HORIBA has grown into a true global enterprise with 38 Group companies and 3,800 employees in 22 countries. As the world undergoes immense change, expectations within HORIBA also grow. Meeting this challenge head on, our aim is to fulfill social responsibility through a shared vision and strategy - "HORIBA Group is One Company."

We will translate the technological prowess and corporate mindset fostered over the years within Horiba into strategies appropriate for the global market, facilitating harmonious coexistence with nature and generating new corporate value.

We attained OHSAS18001 certification for our health and safety management system and combined quality, environmental and safety systems into an Integrated Management System (IMS). We will boost the efficiency of our corporate activities through this IMS system based on the precept "Joy and Fun." We will also work to fashion an open, fair and attractive organization.

This report summarizes the HORIBA Group's environmental activities and results from fiscal 2003. It has been created to aid understanding of our environmental conservation stance and efforts. I look forward to your continued support and guidance in the coming years.

August 2004
Atsushi Horiba

Environmental Management

Developing IMS

Toshihiko Uno
Executive Director and Senior Corporate Officer

Integrated Management System (IMS) Policy

1. We will meet diversified customer needs by providing products and services through an environment-friendly production system.

2. We will comply with laws and regulations to promote mutual prosperity.

3. We will strive for continuous improvement by establishing appropriate business goals and objectives, and implementing the plans to achieve them.

Environmental Management Policy

The need for environmental preservation has reached an unprecedented high due to the onslaught of overpopulation, excessive production and consumption and waste in the 21st century.

Air, water and soil pollution are all on the rise. To combat this, HORIBA provides analyzers to identify and measure harmful chemicals, equipment to measure air pollution from automotive and stationary sources, contamination in rainwater, lakes and groundwater, and soil contamination from volatile organic compounds (VOC) and heavy metals. We constantly endeavor to develop novel technologies that contribute to environmental conservation.

In 1997, we became the first in our analyzer industry to obtain ISO14001 certification. Pursuing environmental preservation and coexistence with nature, we always endeavor to develop eco-conscious products, reduce waste and conserve resources and energy. We have posted a very successful record over the years. In our Environmental Plan Stage II, in effect from fiscal 2001 to 2003, we increased the efficiency of our environmental management system (EMS) and advanced green procurement.

Future Direction

After our initial attainment of ISO quality and environmental qualifications, HORIBA operated separate quality, environmental, and safety management systems. In fiscal 2003, we strove to reflect ISO more directly in company management by introducing OHSAS-18001 and shifting to a single, integrated quality, environmental and safety management system called IMS.

Official examination of our IMS was completed in 2004*. In the coming years, we will continue to raise management efficiency and reduce our environmental burden. In accord with our brand statement, we will install IMS in all Group companies, promoting our long-term vision to help save the environment.

* We obtained OHSAS-18001 certification in July 2004, while our IMS was recognized as being a valid and effective management system by the relevant authorities at the same time.

Results of Environmental Plan Stage II

Fiscal 2003 marked the final year of our Environmental Plan Stage II (three-year plan). Results are shown below.

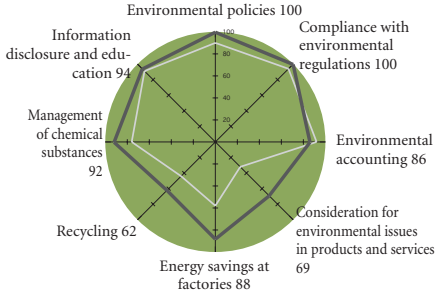
Classification	Theme	Fiscal 2003 Targets	FY 2003 and Three-Year Results	Self-Evaluation
A. Promote Environmental Management	1. Maintain and enhance Environmental Management System (EMS)	* Establish EMS at all production companies	1. Released environmental information e.g. Environmental Report 2. Implemented EMS at 3 companies	△
		* Implement 22 SS	* Introduced EMS at all SO in 2001 and all SS in 2003	
		* Create "information net" for purchasing and promote awareness/support activities	* Released information on HP in line with start of green procurement	
	2. Continually improve the self-appraisal system	* Improve GP-21 (Green Point 21 self-appraisal system) by 65% (1998 standard)	* Improved GP-21 to 691 points (up 51%)	△
		* Awarded Chairman's Prize by the Council for Recycle Promotion	* Ranked 112th on Nikkei Environmental Management Survey * Awarded Chairman's Prize by the Council for Recycle Promotion for fourth consecutive year	
	3. Create an environmental accounting system; promote effective and economic conservation	* Maintain environmental accounting system	* Maintained environmental accounting based on guidelines from Ministry of Environment	○
		* Maintain environmental accounting (costs at 0.5% of sales)	* Attained 2.3% environmental costs against sales	
B. Create Environmentally Friendly Products	1. Develop environmentally friendly products; expand reuse and recycling	* Apply environmentally friendly design to over 60% of new products	* Implemented environmental conformity design in 6 out of 10 products in FY2003	△
		* Develop technology for lead-free print circuit solders	* Used lead-free circuits in new products (pH meter etc.)	
		* Create reuse/recycling system (Reuse over 60% of collected products)	* Established sales subsidiary for used products (sold 42%)	
C. Implement Eco-Conscious Production System and Activities	1. Reduce environmental impanct and aim for "zero-emissions"	* Reduce electrical consumption by 15%	* Renewed air-conditioner system at main factories (expect benefits to emerge in FY04 onward) * Consumption increased by 2%, but power consumption factor reduced by 9.8%	△
		* Reduce CO_2 emission by 3% (FY 2000 standard)	* Reduced CO_2 emissions by 12.5% by improving facilities at main factories	
		* Reduce surplus and inventories by 30% (FY 2001 standard)	* Reduced inventories by 14.8% and surplus by 21.9%	
		* Reduce waste to less than 1% (final waste at landfill), and less than 50% (total waste) (FY 2002 standard)	* Final waste at landfill totaled 21.1% due to problems with separation and recycling resources * Reduced total waste by 38.5% to 61.5% due to increased metal from product collection and company layout change	
		* Boost resource recycling rate to 75%	* Resource recycling rate stood at 64.5% due to problems with waste separation and resource recycling	
	2. Comply with rules and regulations	* Create a management system	* Established continuous pH monitoring for water emission and real-time monitoring system for power and gas consumption	○
	3. Reduce harmful substances	* Reduce chemical inventories and harmful substances by 30% each (FY 1999 standard)	* Reduced high-use harmful substances by 58.4% (from 621.2kg in FY99 to 258.6kg in FY03)	○
		* Reduce use of harmful substances by 30% (FY 2000 standard)	* Reduced annual consumption by 42% and year-end inventories by 6% (new lead-free solder production line kept reduction minimal) compared with FY00 due to departmental inventory adjustments.	
		* Create system to boost awareness and reduce environmental impact of chemical substances	* Promoted company-wide project and initiated green procurement system	
D. Energize Communication	1. Promote information disclosure	* Utilize environmental information	* Issued environmental report (Japanese version in June/English version in August) * 113 responses to questionnaires/surveys	○
	2. Enhance contribution to society	* Social Action Program	* Executed 6 social contribution activities (rubbish cleanup, environmental courses etc.)	○
		* Establishment and promotion of in-house enlightment activities	* Performed voluntary improvement activities in 41 of 54 departments	
E. Supplementary	1. Shift to IMS	* Shift to Integrated Management System now complete	* Received examination of IMS in June 2004	○

* Note: Self-Evaluation Category: ○ = Goal achieved; △ = Achieved more than 60% of goal ; × = Achieved less than 60% of goal

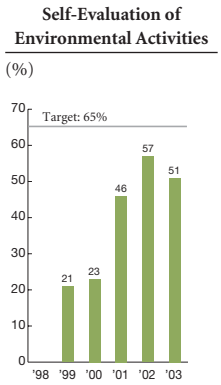
Green Point 21: Self-Evaluation of Environmental Management

HORIBA self-evaluates its environmental management based on an eight-point scale as shown in the radar chart at right. In fiscal 2003, the final year of our Environmental Plan Stage II, we strove for a 65% improvement rate, but fell short with 51%. We made progress in "consideration of environmental issues in products and services" and "energy savings at factories," but needed to improve "recycling." This requirement will be incorporated into our Environmental Plan Stage III.

Self-Evaluation of Environmental Activities



Self-Evaluation of Environmental Activities



Mid- to Long-term Plan for IMS & Environmental Plan Stage III

HORIBA's Environmental Plan Stage III has been incorporated into the mid- to long-term plan for IMS, integrating it with conventional systems to craft the optimum design. We intend to enhance environmental management efficiency by cross-developing and standardizing quality, environmental and safety systems.

Integrated Management System (IMS) Policy	Objectives		Means to Achieve	FY 2006 Targets (Relative to FY 2003)	FY 2004 Targets
Establish eco-conscious production system and meet customer needs through products and services	Increase corporate value	1. Improve profitability	Advance Turn-Around-Project (TAP)	Increase profits of ratios	Improve profits in 7 areas
		2. Promote environmental management	Create EMS at domestic production companies	Attain ISO at 2 companies and 3 factories (domestic)	Attain ISO at one company
	Enhance brand value and customer satisfaction	3. Ensure rapid delivery	Meet delivery expectations	85%	83%
		4. Respond swiftly to complaints	Completed claims within 1 month	Over 80%	Over 70%
			Keep loss from returned products to under ¥290m	Under 0.60%	Under 0.80%
		5. Improve service quality	Reduce unfinished work and eliminate errors	Reduce by 30%	Reduce by 10%
Comply with local regulations and promote coexistence		6. Bolster environmental/ IR communication	Promote environmental enlightenment in community and enhance communication	Over 10 cases	Over 4 cases
		7. Design environmental conformity products	Expand environmental conformity design in new products	Over 70%	Over 60%
			Eliminate use of lead solders	Totally eliminate	Reduce lead circuit boards by 30%
			Promote green procurement and eliminate prohibited substances (WEEE and RoHS)	Totally eliminate Totally eliminate (FY 2005)	Formulate and implement plans for elimination
Formulate targets and plans to achieve them	Promote creation of green factories	8. Prevent global warming	Improve power consumption factor through energy- and resource-saving activities and reduce CO_2 emissions	Over 7%	Over 1%
			Reduce power consumption	Over 17%	Over 11%
		9. Promote green procurement	Promote green procurement of office supplies	Over 60%	Over 50%
		10. Reduce waste	Reduce waste	Over 8%	Over 2.5%
			Promote product reuse and recycle	Over 80%	Over 60%
		11. Enhance management of harmful substances	Enhance management of chemical substances, reduce emissions and eliminate harmful substances	Totally eliminate	Set plan for each substance
		12. Raise production/ administrative efficiency	Reduce errors in processing	Set plan for each product	Set plan for each product
			Increase percent of usable collected parts	Under 0.20%	Under 0.25%
			Reduce work hours	Reduce work hours	Set guidelines
		13. Strive for zero-accidents	Eliminate absenteeism from work accidents	Zero-accidents	Zero-accidents
			Conduct medical exams for 100% of personnel	100%	98%
			Reduce risks through appropriate management	Eliminate risk V and reduce risk IV by 1/3	Eliminate risk V and halve risk IV

Key Objectives of IMS Mid- to Long-term Plan (Environmental Plan Stage III)

The following are to be achieved by fiscal 2006.

1. Reduce environmental burden of products and bolster compliance

a) Expand and enhance environmental conformity in the design of new products

b) Totally eliminate harmful and prohibited substances by promoting green procurement

* Comply with WEEE and RoHS directives (lead-free solder etc.) and provide products that are environmentally friendly throughout their lifecycle.

2. Conserve energy and resources to reduce global warming and waste

a) Reduce power consumption and CO_2 emissions

b) Curb waste generation

*Improve overall company efficiency by eliminating inefficient processes and reducing work hours.

3. Expand EMS to all Group companies

We will strive to employ our EMS and IMS in all Group companies.

4. Promote environmental activities and awareness outside the organization

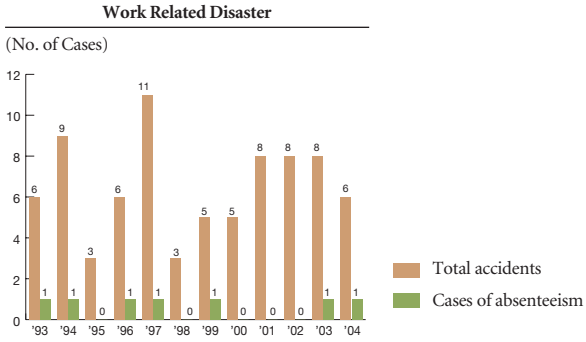
We seek to build awareness of environmental conservation through employee action.

Aiming to Expand and Enhance EMS
Efforts towards OHSAS18001

Based on an annual plan formulated by a health and safety committee, HORIBA is taking several approaches to ensure that "zero-accidents" is achieved. These include safety patrols, education, training and medical examinations. The facilitation of occupational health and safety as well as the lack of heavy machinery used at HORIBA results in low absenteeism due to injuries. Nevertheless, minor injuries still occur.

We revamped our health and safety system by introducing OHSAS18001 to ensure the well-being for all personnel.

Work Related Disaster



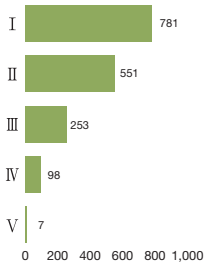
Testing equipment for gas supply

Executing Risk Assessment

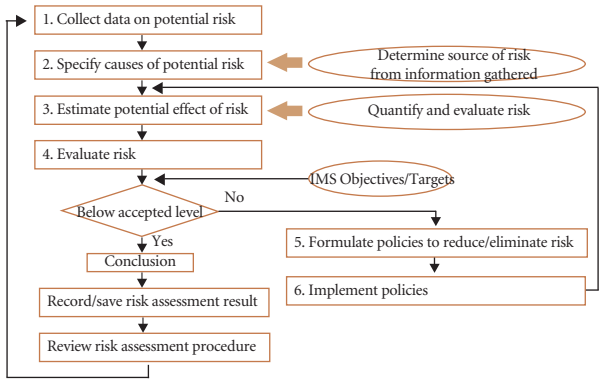
Risk assessment involves identifying hazards in the workplace, estimating the magnitude of risk, and selecting appropriate measures to eliminate or minimize (intolerable) risk.

We identified about 1,700 hazards, and estimated the level of each risk through two implementations of risk assessment in our workplace. Also, we have formulated and implemented strategies and policies to minimize risk in the most serious areas.

Risk Assessment: Cases by Risk Level



Risk Assessment Process



Endeavoring to Attain OHSAS18001

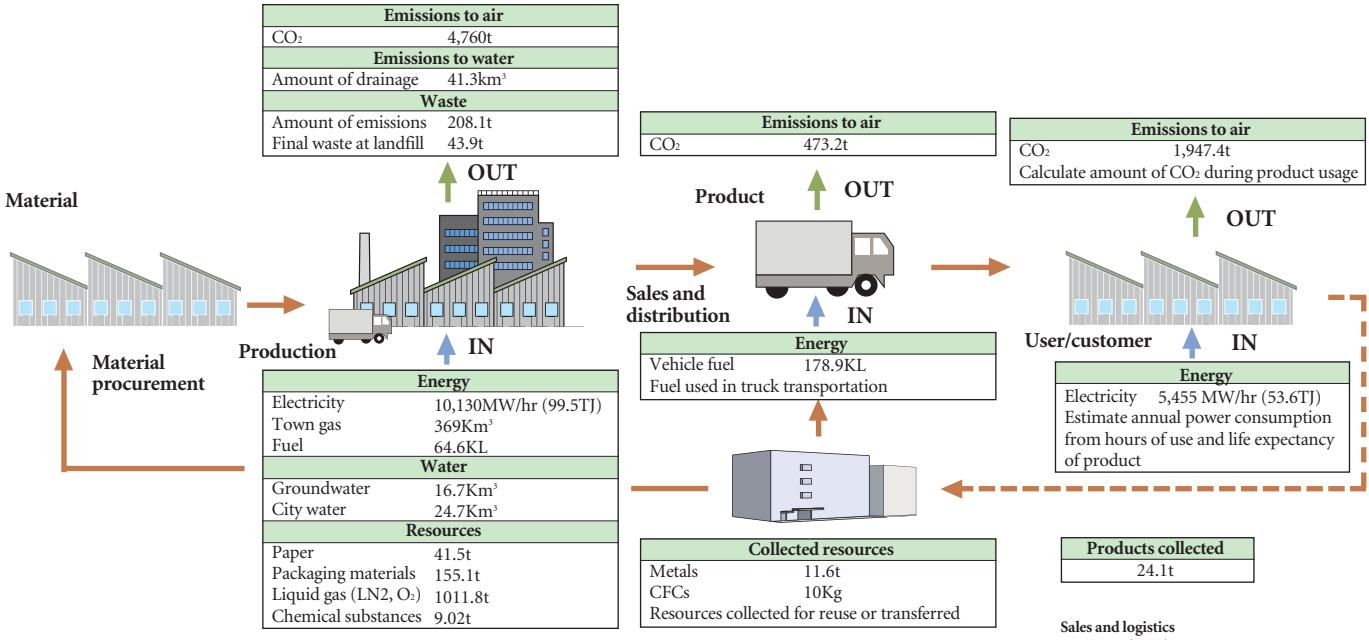
In fiscal 2003, we pushed ahead with efforts to attain OHSAS certification by incorporating a health and safety management system into our IMS.

Our health and safety management system was evaluated and found to have no major deficiencies. We will continue to improve IMS in the coming years.

Reducing the Environmental Impact in Operations

(1) Head Office/Factory

HORIBA strives to preserve resources by considering environmental impact at each stage of the product lifecycle, from the supply chain for materials and parts to the production process (which uses energy, water etc.), final product (which needs energy), and reuse and recycling. These factors are shown in the diagram below.



Computation:
Coverage: Head Office/Factories
Period: Fiscal 2003

Production Input
Electricity: from power companies
Gas: Town gas
Fuel: Gasoline, diesel, kerosene
Water: Groundwater, city water
Resources: Office paper, packaging materials, liquid gas, etc.

Production Output
CO_2: Amount generated during electricity, gas, fuel and water consumption and through waste emissions
Amount of emissions:
At downstream
Waste: Total amount of emissions and waste at final landfill

Sales and logistics
Transport from factory to customer/store
Consumption
Calculated as power consumed by environment-friendly products in fiscal 2003
Collect/Recycle/Reuse
Products collected in fiscal 2003

(2) Sales Offices Total (11 SO plus one business site)

	INPUT		
	Item	Unit	FY 2003
Energy consumption	electricity, Town gas, fuel	TJ	9.7
Water	Water used Groundwater, city water	km³	1.1
Resource material	Office paper, packaging materials, liquid gas, etc.	t	10.2
	Liquid nitrogen	t	3.3
	Liquid argon	t	2.9

OUT PUT		
Item	Unit	FY 2003
Total CO_2 emissions	t-CO_2	403.8
Wastewater discharge	km³	1.1
Total waste produced emissions	t	4.3
Emission into air	t	3.3
Emission into air	t	3.8

(3) Group Company Information (Production Companies)

Region	Company name	No. of employees	Power consumption (MWh)	Town gas consumption (km³)	Water consumption (m³)	Automobile fuel consumption (kl)	Waste emissions (t)
USA	HII (Irvine)	112	630	–	8,203	–	–
	HII (Ann Arbor)	108	1,050	45	5,101	–	–
	HII (Tempe)	7	1,200	–	1,600	50	6
EU	HE (HG)	106	336	34	538	157	38
	HE (HIL)	80	377	8	1,693	80	0
	HE (HF)	25	223	0	60	0	5
	ABX (QA&BPT)	493	2,286	–	12,500	–	400
	JOBIN YVON	452	4,855	–	35,958	538	–
ASIA	HKL	18	43	–	–	3	0
	HAT	118	364	59	2,450	17	0
	STEC	348	4,137	234	10,500	53	44

Note: COS has been renamed HAT

Environmental Accounting

Improving Management Quality to Achieve Sustainable Development

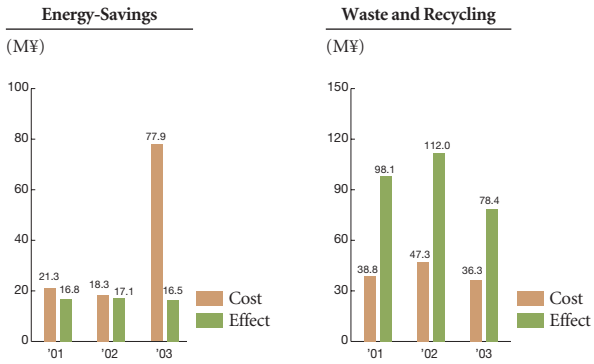
Environmental Accounting

At HORIBA, we quantify "environmental costs" and "environmental effects" so that we can set internal targets and gauge the effectiveness of our activities. We reflect areas for improvement in environmental conservation activities to promote environmental management.

In fiscal 2003, we formulated new policies for saving energy and green procurement to improve our environmental conformity design, cost effectiveness and control.

"Environmental conservation effects" are gauged in terms of business revenue or cost and substance reduction. HORIBA improved the cost of environmental activities and boosted the sale of energy-saving products to 14% (relative to total sales) in fiscal 2003. This in turn helped reduce customer electricity consumption. The computation of R&D effects is based on the profit from sales of environment-friendly products.

Environmental Preservation Costs and Effects



Standards for Environmental Accounting

Coverage	: Head Office/Factory, 11 sales offices (Horiba Techno Service for part of period)
Period	: March 21, 2003 to March 20, 2004
Investment/ expenditure	: In conformity with financial accounting
Expenditure	: Includes personnel, management and R&D expenses (excl. depreciation).
I) Personnel costs	: Average labor costs x no. of hrs environmental conservation activities.
II) R&D expenses	: R&D expenses: Cost of R&D by product (materials and personnel costs) + cost of research into conservation activities.
Calculation effects	
I) Amount reduced	: Amount in previous year - amount in current year (changes in business activities have been adjusted for in income and expenses).
II) Economic effects	: Based on usual life (usually 6 years) of major capital investments, products with greatest environmental burden and conservation activities.
Note	: Based on Environmental Accounting Guidelines (2002 Version) issued by the Ministry of the Environment

Analysis of Fiscal 2003 Results

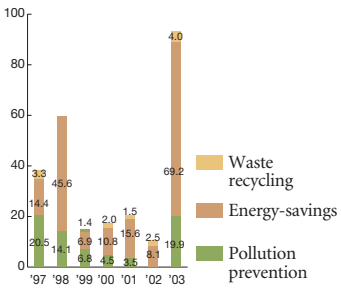
Horiba invested a total of ¥127 million in environmental protection activities in fiscal 2003, with total costs amounting to ¥723 million. This represents an aggregate increase of 13.5% on a year-on-year basis, mainly due to investment in equipment related to environmental conservation. We implemented policies to prevent pollution, including reducing energy used by air conditioning, switching to city gas and employing lead-free solders in printed circuit boards.

We also cut management costs by 5%, resource recycling costs by 13% and social activity costs by 7%. We reduced CO_2 emissions (energy and service water related) by 477t as a result of adjusting for sales fluctuations. Although electrical consumption increased slightly from the previous year, we were able to reduce the overall power consumption factor by 1.7% through efforts to save air conditioning energy which consumes 60% of our total energy. The benefits of using energy-conserving equipment are expected to fully emerge in fiscal 2004. We also reduced city gas consumption by 13%.

We reviewed our recycling methods with the objective of reducing waste and achieving "zero emissions." This culminated in a year-on-year improvement of 18% in the recycling rate. Despite this, the total amount of waste increased by 5%, prompting us to step up future efforts.

Our R&D environmental efforts resulted in a greater number of products designs with environmental conformity. Gross sales of energy-saving products increased 8.7%.

Investment in Equipment for Environmental Conservation



Future Initiatives

We implemented IMS in fiscal 2003 to increase systems efficiency. Combining quality, environment and safety systems, IMS has optimized HORIBA management policy. To further streamline operations we plan to set up facilities for the new system.

We will also focus on achieving quality targets as a means for driving development. Besides improving our accounting system, we will utilize data in a more timely fashion.

(1) Costs and Effects of Environmental Conservation Activities

(Millions of yen)

FY 2003										
Category		Environment Conservation Costs		Total	Change	Key Activity	Economic Benefit (Internal)			Reduction of CO_2 emissions (minimal effects)
		Investment	Expenditure		%		Amount	Classification	Item	t-CO_2
(1) Business Area		89.1	51.0	140.1	196.1		104.1			1,121.1
Details	1. Pollution prevention	19.9	6.0	25.9	445.3	Installed equipment to eliminate gas emissions/lead-free solders, launched green procurement system (p.17)	9.2	a	Conserved power, reduced monitoring hrs, increased efficiency	416.1
	2. Global environmental	69.2	8.7	77.9	426.0	Shifted to city gas for air conditioners, promoted energy-saving activities, reduced chemical substances (p.19) Reduced waste, encouraged recycling (p.20)	16.5	b	Reduced/eliminated substances that cause global warming, conserved power	431.7
	3. Resource circulation	0.0	36.3	36.3	76.7		78.4	a	Reused production surplus, reduced water consumption/waste	273.3
(2) Upstream/downstream		3.9	0.8	4.7	73.9	Increased green procurement, promoted product reuse/recycle (pp.13 & 20)	12.7	b	Sold recycled products, collected/reused products	75.0
(3) Administration		3.8	84.7	88.5	95.8	Utilized EMS effectively, disclosed/advertised environmental information, enhanced education (pp.12 & 13)	9.6	b	Enhanced education, management, reporting/advertising	0.0
(4) R&D		27.5	549.9	577.4	107.6	Developed eco-friendly products, promoted environmental conformity design, furthered efforts towards lead-free solders (pp. 14 & 15)	1,386.9	b	Increased R&D efficiency, boosted profits from environment-friendly products	0.0
(5) Social activities		3.0	36.4	39.4	92.7	Supported Global Water Forum, conferences and seminars, conducted education at schools, participated in regional cleanups, enhanced communication (pp. 22 & 23)	1.6	b	Gained benefits from advertising	0.0
(6) Environmental remediation		0.0	0.0	0.0	0.0	N/A				0.0
Total		127.2	722.8	850.0	113.5		1,515.0			1,196.1

a: Actual effect
b: Minimal effect

Note: CO_2 calculation: ¥9,425/t: maximum estimate of ¥34,560/t to achieve targets set by Kyoto Protocol

Related Index

Item	
Total investment in current period	¥766.0 million
Total R&D cost in current period	¥1,368.1 million
Eco-friendly products	42.2%
Investment (Environmental investment/total investment)	16.6%
Cost of sales	2.3%
Energy-saving products (10,153 units/total 365,334 units)	2.8%

(2) Environmental Conservation Effects

Impact on environment by operating activities (direct) and product usage (indirect) compared to previous fiscal year

	IN PUT					OUT PUT				
	Item	Unit	2002	2003	Change	Item	Unit	FY 2002	FY 2003	Change
Energy conservation	Power, town gas, fuel	TJ	138.7	126.7	-12.0	CO_2 emissions	t-CO_2	5,440.4	4,963.0	-477.4
Water	Water consumption (well-water, city water)	km^3	52.1	42.5	-9.6	Waste water produced	km^3	52.1	42.5	-9.6
Materials	Paper, packaging, materials	t	222.6	206.8	-15.8	Total waste produced emissions	t	230.1	212.4	-17.6
	Liquid N_2, O_2, Ar	t	1,140.2	1,017.9	-122.2	Air emissions	t	1,140.9	1,018.8	-122.1
Chemical substance use	Chemical substance use	t	12.1	9.0	-3.1	Waste transferred	t	1.8	2.4	0.6
	PRTR related chemical consumption (over 10kg, 8 kinds)	t	0.7	0.7	-0.0	Waste transferred	t	0.2	0.1	-0.0
						Emissions (Air, water)	t	0.0	0.0	0.0
	Lead consumption (compounds)	t	0.3	0.3	-0.1	Recycled amount	t	0.1	0.1	-0.0
Effects of activities during product use (Japan): 10,153 units (14.4% of total sales)						Power conserved: 3,188 MW/hr Amount of t-CO_2 reduced: 1,138t				

• Environmental Preservation Effects and Customer Economic Effects

Environmental Preservation Effects (Millions ¥)	Environmental Performance Improvement (Reference)
22.0	26.7
0.6	
1.3	
2.7	
0.0	
0.0	
0.0	
0.0	
	47.8
Total	74.5

(3) Economic Benefit for HORIBA

Effect on cost reductions and profits of environmental preservation measures

Item	Action	Amount Saved (Millions of yen)
Cost reduction	Energy-conservation	18.8
	Reduction of waste disposal costs	-3.9
	Reduction of wastewater costs	4.0
	Reduction of packaging/materials	0.7
Profit	Sale of goods from recycled waste	0.1
	Sale of recycled products	6.1
Total		25.7

(4) Economic Benefit for Customers

Reduction of power costs during product use

FY	Units sold	Energy saved (10,000kw/h)	Amount saved (Millions of Yen)
2003	10,153	318.8	47.8
5-year total	20,902	545.5	81.8

Notes: (1) HORIBA possesses 47 energy-saving products
(2) Electricity costs are calculated at the rate ¥15 per kw/h

New Analytical and Measurement Technologies

For the Protection of the Earth

Engine Measurement Technology

Engine Measurement Systems Director
Masayuki Adachi

It is now commonplace for automotive companies and public regulatory agencies around the world to analyze vehicle exhaust emissions to ensure new cars meet local regulations. Coinciding with the first of these vehicle emissions regulations in the United States in the 1960s, HORIBA launched the manufacture and sales of exhaust gas analyzers and gas sampling equipment designed for exhaust gas tests. The latest versions of these products are the MEXA- 7000 series and the CVS-7000 series.

We support exhaust gas testing with a number of other products that include chassis dynamometers and automated driving robots for automobile and engine testing facilities plus specialized analyzers and data processing computer systems.

Since exhaust emission regulations were implemented in the 1960s, engine and exhaust gas processing technologies have achieved major leaps forward. In response to the burgeoning demand for new technologies to analyze exhaust gas, we have developed advanced techniques that accurately measure low concentration gases in the latest cars with exhaust gas "cleaner than air." At HORIBA, we will press ahead with the development and improvement of these advanced analytical techniques for emissions measurement.

The precise measurement of particulate matter (PM) and nitrogen oxides (NOx) in diesel exhaust gas has become a key objective in new regulations. We are providing new tools to support the R&D required to reduce these diesel exhaust gas constituents. Notable instruments are the MEXA-1370PM which swiftly analyzes trace amounts of particulates, and the MEXA-1170NX NH3 analyzer which is indispensable in NOx catalysts research. We also released the OBS-1000 for on-board emissions measurement of exhaust gas produced by a moving vehicle. This system is also expected to be applied to the analysis of roadside air contamination, an area that has received little attention to date.

Solving Environmental Problems with Analytical Technology

Exhaust Gas Measurement
Development Manager
Masahiko Fujiwara

The mission of the Corporate Environment and Process Systems Division is to "develop the manufacturing industry through measuring technology, thereby contributing to environmental conservation and peace-of-mind."

We plan to carve out new markets by providing solutions for production processes. We will develop markets for gas analysis, environmental water quality analysis, laboratory water quality analysis, process gas measurement and process water measurement.

In the gas measurement market, we seek to improve the quality of air through measurement systems and gas monitors for factories. The AP-370 series, launched in June 2004, is extremely friendly to the environment as it uses 30% less power than the AP-360, employs lead-free solders in its circuit boards and contains recyclable parts.

We commenced sales of the ENDA-5000 series in May 2004 to measure factory gases. This equipment is a mere one-third the size of conventional models, uses 25% less power and employs lead-free solders in its circuit boards.

In the water quality measurement market, we released the F-50 series of pH meters in May 2003, which has a "heavy-duty" electrode and long service life.

Besides analyzing equipment, we offer an integrated environmental system that incorporates an environmental measurement network, data analysis and remote maintenance capability.

APNA-3700

pH meter F-50

Analysis Technologies for Medical and Health Industries

Medical Systems Director
Seiji Usui

Hippocrates, known as the "Father of Medicine," supposedly conducted urine tests at the bedside of his patients. Nowadays, a multitude of clinical testing equipment is used to determine the cause of an illness, monitor treatment and follow recovery. Scientific technology has progressed dramatically since the latter-half of the 20th century, helping to uncover the roots of many illnesses. Medical technology has similarly come along in leaps and bounds. Analytical technology has been a decisive factor in these evolutions.

The advent of Evidence Based Medicine (EBM) in recent times has led to financial and efficiency improvements in the medical arena. The development of analytical instruments to generate test results has made this possible. Becoming sick is an unfortunate but inevitable part of life. Throughout the years, the medical world has sought to find cures to all sorts of illnesses. HORIBA plays an integral role by developing expert analytical instruments for medical use. We are also active in illness prevention, recognizing the need to provide equipment for individual as well as specialist use. By further developing analytical technologies and applied products, we seek to realize a healthy and long life for all.

Developments in Semiconductor Instruments

Semiconductor and Scientific
Systems Deputy Director
Tsukasa Satake

All companies strive for maximum production efficiency in semiconductors and LCD panels for flat panel displays. But, they are also aware of the importance of including environmental, health and safety-aspects into development and production processes.

In particular, efforts aimed at preventing global warming are gathering steam around the world.

Changing weather patterns are one of the United Nations central themes at present, while various lobby groups now demand the voluntary reduction of greenhouse gases by companies in the semiconductor industry.

HORIBA designed the FTIR gas analyzer (FG-100 series) to measure PFC gas generated in semiconductor production. This analyzer can quantify emission density so users can implement appropriate controls, which leads to lower emissions and more environment-friendly operations.

To lessen our environmental burden, we employ the environmental conformity design process in the development stage of new semiconductor measurement instruments. We seek to lessen environmental impact in all other stages of the semiconductor lifecycle.

FG-120

Environmental Management System (EMS)

Towards the Creation of IMS

Promoting IMS

HORIBA obtained ISO9001 quality management certification in 1993 and ISO14001 environmental management certification in 1997. These systems were operated independently with separate targets and objectives, causing inefficient duplication.

Furthermore, although the fundamentals of the quality, environmental and safety systems differed, they were essentially operated the same way.

As a result of extensive investigation into a more efficient and effective management system that incorporated company policies and objectives, we decided to create an integrated management system (IMS).

Steps towards Introduction

In fiscal 2002, we formulated the framework for IMS, and in fiscal 2003 we conducted a trial run while also setting aside time to attain OHSAS qualification. Our IMS was officially recognized in July 2004 following an investigation by the appropriate bodies in June 2004.

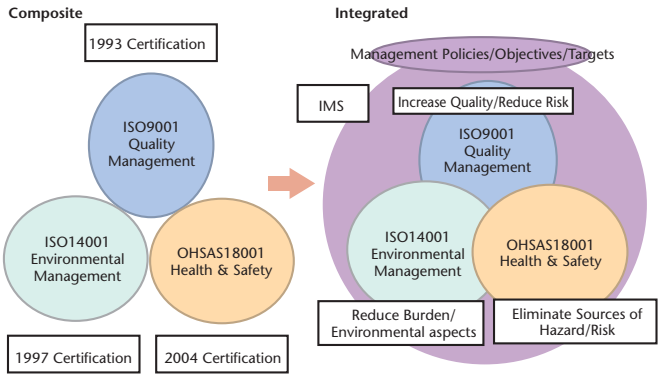
Specific Initiatives Taken

1. Integrated activities common to quality, environmental and health management systems to create-high-value-added, efficient business operations
2. Set policies and developed a Plan-Do-Check-Action (PDCA) cycle for target and objective achievement
3. Introduced performance-based management
   IMS policies, objectives and targets are based on management strategies and previous fiscal year results. To ensure employees work towards the same goal, we formulated a PDCA cycle. We conduct frequent monitoring and make modifications when necessary to facilitate continuous improvement.

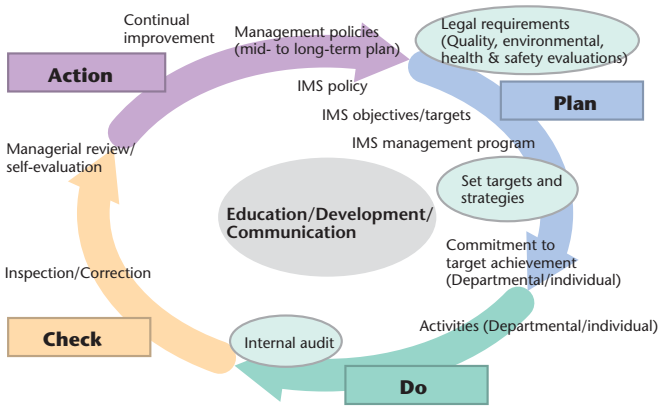
Merits of New System

1. By integrating the three management systems into one, we have simplified the decision-making process.
2. Synergy in quality, environmental and safety activities make adjustments simple, enabling more appropriate judgments.
3. Document management, recording and creation have become easier, thereby increasing efficiency in administration.
4. Internal audits and external examinations keep management costs down.

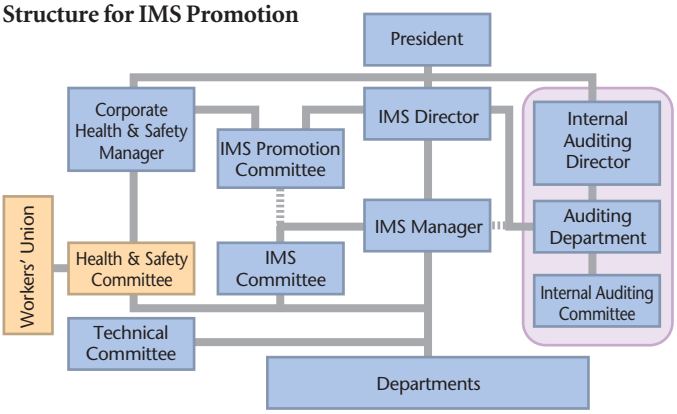
Outline of IMS



IMS Management System



Structure for IMS Promotion



Expanding IMS to Group Companies and Business Sites

HORIBA has 11 sales offices and Horiba Techno Service has 22 service stations in Japan. ISO quality and environmental management systems are in operation at all of these sites.

Vigilant monitoring at all companies ensured that our IMS and OHSAS were successfully recognized by the relevant authorities.

Operating our IMS in sales and service sites close to the customer allows more accurate and speedy response. We will promote IMS in HORIBA production companies in keeping with our stance, "HORIBA Group is One Company."

Compliance with Laws and Regulations

Laws and regulations pertinent to HORIBA, including those related to the environment, health and safety have been compiled in "Leagal and other requiremetes regist table" daily to guide operations.

In accordance with requirements, we conduct daily checks of all equipment and have unique sets of standards for monitoring. Despite zero complaints addressing environmental matters, one incident regarding water drainage was reported in fiscal 2003 (see page 19).

Emergency Procedures

To prevent accidents in times of emergency, we specified regular checks and maintenance for equipment and operations while also performing regular drills and training to help reduce workplace risk. In fiscal 2003, we conducted emergency training in three separate locations and made equipment improvements.

Internal Auditing

IMS was up and running when internal audits were held in fiscal 2003. This eliminated separate checks for quality and environmental systems and allowed the respective auditing departments to be integrated into the corporate auditing division.

All 59 HORIBA departments were assessed twice during the year. A lack of communication regarding IMS and inefficiencies in the PDCA cycle, which is fundamental to ISO management, was among the problems uncovered. These shortcomings have prompted the need for a review in fiscal 2004 and beyond.

Training for emergencies

Internal audit of IMS

Training and Awareness of IMS

Training on safety and the environment are conducted at all Group companies for all employees, including new recruits and part-time workers. We began to educate personnel on our IMS in fiscal 2003.

Specific courses, based on specific objectives and equipment maintenance needs, are held to promote safe and environment-friendly operations in each department. Where necessary, we create a skill map, attain legal qualifications, evaluate capabilities and provide additional training.

We strive to expand environmental awareness through seminars, presentations and exhibitions at Group companies and affiliates. Internal networks and reports are also used to make sure all personnel are up to speed on environmental activities.

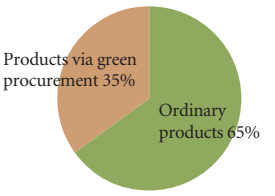
Company-wide presentation on environmental improvement activities

Green Procurement

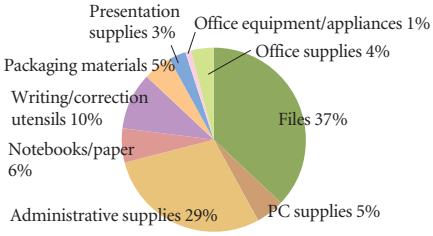
HORIBA introduced a delivery system in fiscal 2001 to ensure products specified with the "green" mark are supplied to all Group companies, including domestic affiliates. Overall purchases during fiscal 2003 amounted to 11.69 million yen (11,665 items), with green procurement accounting for 35% of this.

In fiscal 2004, we will promote green procurement of office supplies at all Group companies, aiming to increase the proportion to over 50% in each department.

Green Procurement of Office Supplies (Monetary Amount)



Breakdown of Green Procurement (Monetary Amount)



HORIBA possesses 146 vehicles for business use. In fiscal 2003, 52% of these were low-emission, low-pollution vehicles. Horiba ITEC Co., Ltd., a subsidiary, launched HIT-GS, an on-board vehicle driving management device designed to automatically record the driving history of commercial vehicles and to provide spoken advice for safe and fuel-efficient driving.

Eco-Product

Helping to Create a Recycling-oriented Society

Promoting Environmental Conformity Design

Semiconductor Systems Development Department
Yoshiyuki Nakajima

HORIBA promotes recycling by employing environmental conformity design in its products. We seek to minimize the environmental burden in all stages of the product lifecycle, from development, materials procurement and production, to usage, collection, dismantling and disposal. To achieve this, we employ Design for the Environment (DFE), which evaluates products in the development stage against a set of guidelines. Products designated as extremely environment-friendly are labeled with a special mark and introduced to customers.

Harmoniearth

Evaluations of environmental conformity design are based on the following criteria. Data and results are taken during product planning, development and production planning.

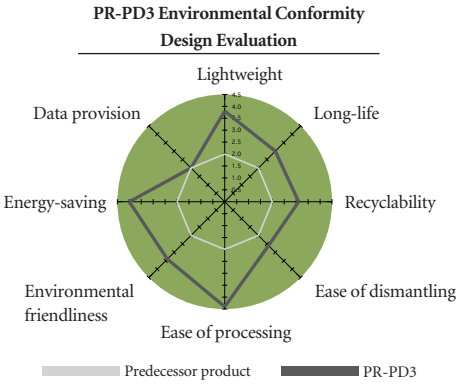
Item for Evaluation	Lifecycle Stage	Criteria
Lightness	Material procurement, production, distribution	Lightness, standardization
Longevity	Usage	Durability, ease of maintenance
Ease of recycling	Reuse, distribution	Possibility of recycling, standardize materials
Ease of dismantling	Dismantling	Ease of dismantling and material separation
Ease of processing	Production, distribution, dismantling	Ease of dismantling and processing
Environmental-friendliness	Material procurement, production, distribution, usage, dismantling, disposal	Degree of harmful substances contained, explosiveness
Energy-saving	Production, distribution, usage	Power consumption, low-energy consumable
Information provision	Usage, dismantling	Information on waste disposal

Environmental Conformity Design in Action

PR-PD3

Reticle/Mask Particle Detection System PR-PD3 can detect particles on semiconductor reticles and masks with a sensitivity of 0.5 μm before fabrication. The compact design, approximately one half its predecessors, also cuts power consumption by 67%, is 35% less bulky, vastly improves processing ability and has a longer service life. This device not only boasts low running costs with very little impact on the environment.

PR-PD3



New ENDA Series

In May 2004, HORIBA commenced sales of its ENDA-5000 series stack gas analysis system, which continuously measures concentrations of gases emitted from power generation plants and factories. In comparison with the ENDA-600 series, the new model uses 25% less power and 52% less space in 28% less mass. Lead-free solders are used on the electrical circuit boards. The reduced size means less materials and greater component recycling.

A shift from a wet to a dry calibration method has reduced the SO_2 calibration time from 15 to three minutes. Calibration gas consumption has also been reduced.

ENDA-5000

Environment-Conscious Production and Sales Activities

Shifting to Lead-free Solders

Production Center Analytical Systems Production Manager Masami Nakane

HORIBA is aggressively striving to reduce the use of lead solders in the assembly of printed circuit boards as part of its environmental management program launched in the second-half of fiscal 2000.

We released the F-50 and D-50 series of pH meters in May 2003, becoming the first in the industry to utilize lead-free solders for assembling the internal printed circuit board. We also developed lead-free circuit boards for dental instruments used as caries risk indicators. In the future, we will develop additional lead-free circuit boards throughout the HORIBA Group, including HORIBA STEC's new mass flow controllers, SEC-Z500 and SEC-Z313.

We plan to eliminate lead in 30% of all printed circuits in fiscal 2004 and totally eliminate it by fiscal 2005. Lead will be eliminated from printed circuit parts by fiscal 2006.

N2 reflow line

Lead-free solder equipment

New Technologies to Reduce Environmental Burden

As the first step in abolishing the use of ozone-depleting CFCs, we shifted to AK225 for circuit board cleaning, and then abolished the need to wash them altogether in 1999.

In 1998, 2.9t of dichloromethane was used to clean machining oil from parts in metalworking. We eliminated this substance with a switch to a hydrocarbon (n-decane) in 1999.

To reduce the wood used in packaging large metal analysis equipment such as EMIA and EMGA, our recycle workgroup developed a durable cardboard substitute material, which may be recycled, lowers packaging costs and reduces waste.

Less Packaging in Product Development

With the goal to reduce resources in finished products, environmental conformity design utilizes less packaging materials and incorporates recyclable materials. The table below shows metrics that are used to evaluate the environmental-friendliness of packaging materials. Note that as products become smaller, the amount of packaging materials required is reduced.

Item for Evaluation	Criteria
Lightness	Heavier/same/lighter (less than 10%, less than 20%, over 20%)
Recyclability	Internal scoring system for storage containers and cushion material
Ease of collection/transport	Can reduce volume/need machinery/reduce without machinery
Ease of separation/processing	Cannot dismantle/partially dismantle/completely dismantle
Environmental-friendliness (chemical substances used)	Higher concentration/same/lower concentration, not used

Product Reuse and Recycling

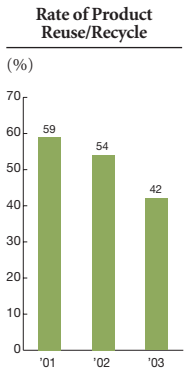
Product performance generally deteriorates over time, leading to eventual disposal and environmental burden.

However, it is possible to overhaul certain parts and restore them to normal working order. This meets customer demand for used (near-new) products and reduces waste.

HORIBA reuses and recycles used products where possible. Horiba and two environmental companies have invested in recycling electronic equipment in response to the increasing demand for environment-friendly sales activities.

In fiscal 2003 our goal was to collect over 60% of used products, but we fell short with 42% (65 of 154 items).

Some of the measuring instruments we supply have long service lives and cannot be effectively recycled. We promote their reuse.



Green Factories

Ensuring Eco-conscious Production

Reducing the Environmental Burden in Production

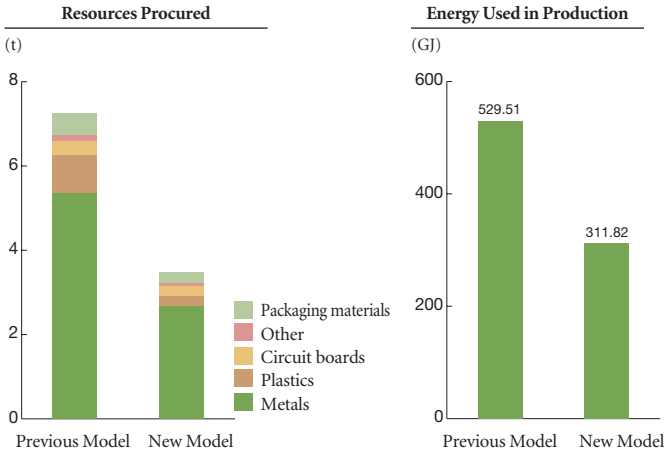
HORIBA purchases numerous components and units from other companies for production and often relies on affiliated companies to assemble its products. The majority of HORIBA's production work entails modifications and testing. All entities involved in the production process are committed to lessening environmental burden in every aspect of the product lifecycle, from material procurement to use and disposal. This remains a major challenge.

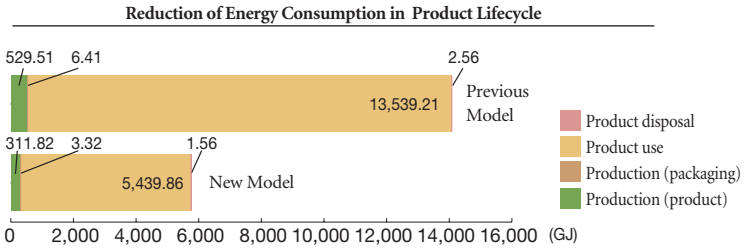
We always endeavor to use fewer resources and conserve energy in production processes. As these products produced at HORIBA by Eco-conscious Production method are not a major percentage of HORIBA products, we will apply similar, eco-conscious production processes in other areas to increase the proportion of environment-friendly products.

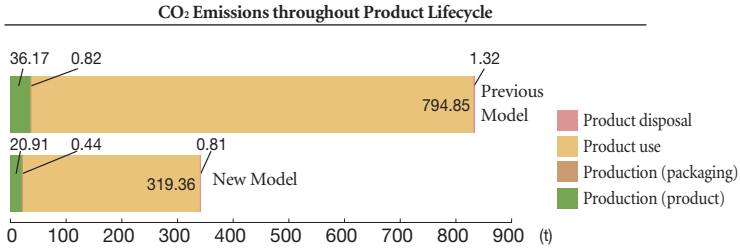
Case: Liquid Concentration Monitor CS-1XX

Total sales (Millions of Yen)	36,834
CS-1XX sales (Millions of Yen)	556
Proportion of sales (%)	1.51
Total sales volume (Units)	165,390
CS-1XX sales volume (Units)	293
Proportion of sales volume (%)	0.18

	Item (t)	Previous Model	New Model
Resources Procured	Metal	5.36	2.67
	Plastic	0.89	0.25
	Circuit boards	0.35	0.23
	Other	0.14	0.07
	Packaging materials	0.50	0.26
	Total	7.24	3.49
Production	Energy used (GJ)	529.51	311.82
	CO_2 emitted (t)	36.17	20.91
Packaging	Energy used (GJ)	6.41	3.32
	CO_2 emitted (t)	0.82	0.44
Product Use	Power consumed (W/unit)	112	45
	Energy used (GJ)	13,539.21	5,439.86
	CO_2 emitted (t)	794.85	319.36
Disposal	Energy used (GJ)	2.56	1.56
	CO_2 emitted (t)	1.32	0.81
	Final waste at landfill (t)	2.70	1.64







Promoting Green Procurement

Recently the idea of assuming responsibility for all stages of the product lifecycle has spread rapidly through production and sales companies. This involves not only managing chemical substances and eliminating harmful elements but also promoting design that facilitates resource reuse as well as energy-saving and long service life features. These obligations fall under the banner of CSR, or corporate social responsibility, and require consideration throughout operations in the entire supply chain.

New laws and directives have been introduced, including the Green Procurement Law and the PRTR Law (Pollutant Release and Transfer Register) in Japan and WEEE and RoHS in Europe. These and similar laws concerning the restriction of harmful substances and promoting recyclability are becoming prominent around the world.

Pressing Ahead with Green Procurement

To meet societal and customer demands, the HORIBA Group has implemented several internal standards regarding green procurement. In November 2003, we released HORIBA Group Green Procurement Policy Version 1, which sets forth purchasing criteria for our approximately 930 partner companies.

The main points of the policy are summarized below:

1. Improve environmental management performance at partner companies
2. Determine nature and degree of chemical substances in procured products
3. Ensure nonuse of prohibited substances with the cooperation of partner companies

HORIBA set the benchmark as one of the first analysis and measuring device makers to practice green procurement. We seek to improve this system by ceasing to purchase any products that contain harmful substances by the end of September 2004.

Characteristics of HORIBA Green Procurement Guidelines

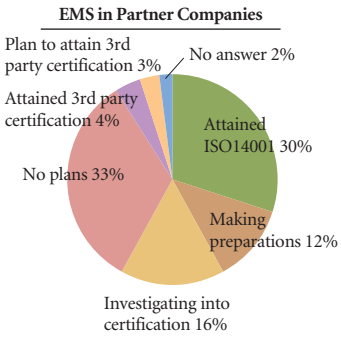
HORIBA Group's green procurement policy aims to reduce environmental burden at partner companies by conducting surveys and promoting industry approved standardized guidelines. HORIBA always complies with regulations regarding prohibited substances in the many worldwide regions it delivers products. Although the RoHS Directive is not specified by law, we have included it in our green procurement criteria to enhance fulfillment of CSR.

Encouraging EMS at Partner Companies

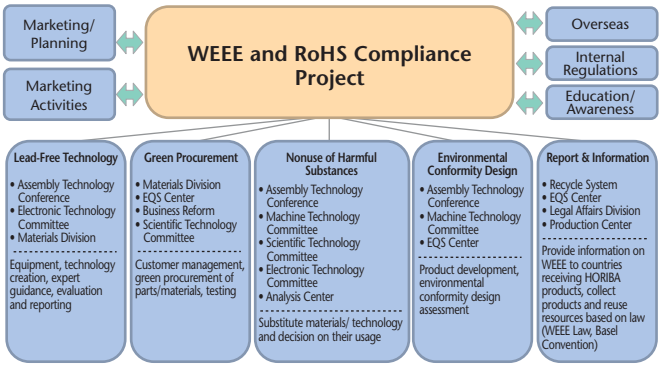
To further develop green procurement, the HORIBA Group encourages partner companies to install an EMS to improve environmental management performance. Of our 600 or so partner companies, the proportion that has attained ISO14001 or third party certification is shown below. We seek to further strengthen ties to improve the EMS at these companies.

Product Design Center Manager
Aritoshi Yoneda

Green procurement seminar for partner companies



HORIBA Group Project for WEEE and RoHS Compliance



HORIBA Group Green Procurement Policy

Basic Concepts
1. Improve environmental management performance at partner companies
2. Determine nature and degree of chemical substances in procured products
3. Ensure nonuse of prohibited substances with the cooperation of partner companies

Partner Companies are Required to:
1. Submit environmental questionnaire
2. Submit certificate stating nonuse of prohibited substances
3. Submit green procurement questionnaire
4. Introduce EMS

Classification of Harmful Chemical Substances

Category	Description	Partner Company Requirements
Prohibited substance	Substances prohibited in production process, materials and parts	Submit nonuse certificate
Reduced substance	Substance of which the use amount, releasing amount and usage unit of the substance set with the reducing target up to a self-marked point of time or to a certain reducing amount	Submit questionnaire on substances/amount included
Managed substance	Substance of which the releasing distance, the MSDS and the stock should be in managed condition	Voluntary management of substances/amount included

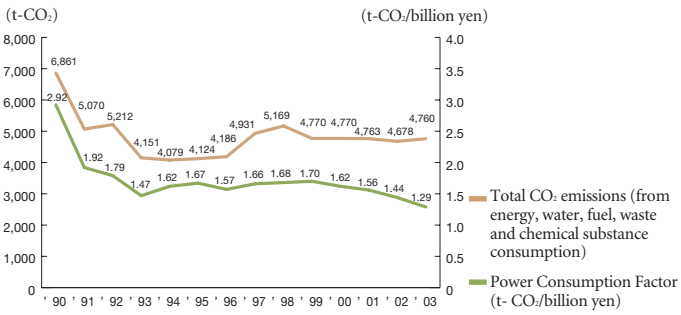
Tackling the Prevention of Global Warming (Reducing CO_2 Emissions)

Up to 93% of the CO_2 emitted during production stems from the consumption of electricity and city gas. Seventy percent of this total is accounted for by air conditioners and the clean room.

HORIBA strives to reduce CO_2 emissions by conserving energy in all Group companies. As part of our Environmental Project Stage II, we formulated a plan to replace 10% of our electrical consumption by using city gas, which generates less CO_2 in heat energy. We are expecting the benefits of this changeover to emerge in fiscal 2004. We also intend to implement other plans to reduce CO_2 emissions and saving energy.

Due to an expected increase in energy consumption in line with economic growth, it will be difficult to maintain CO_2 emissions at 1990 levels in fiscal 2010, our target year. We will therefore focus on improving the power consumption factor. Previously, the total of CO_2 emissions was calculated as the sum of emissions from energy, water, waste and fuel consumption. To help us achieve our 2010 target we will also include those substances that we have already reduced or eliminated, such as chlorine-based organic solvents and ozone-depleting substances.

CO_2 Emissions



Conserving Energy and Resources

Electricity Consumption

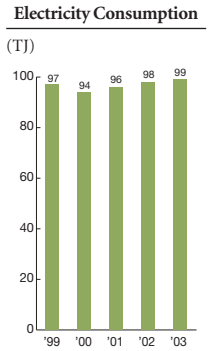
In fiscal 2003, we continued to utilize energy-saving equipment such as sprinklers and inverters, reduced air conditioning use and turned off idle equipment whenever possible. The continuous operation of air conditioners in the clean room during unseasonably warm weather coupled with new facilities for fuel cell research and lead-free soldering precipitated a 2% increase in electrical consumption. Despite this slight increase in electrical consumption, the power consumption factor decreased 9% owing to an increase in sales.

We reduced electricity consumption in production facilities by replacing 100 electrical air conditioners with town gas operated heat pumps. We also reused old cooling towers for some products to save resources and expenses.

These efforts resulted in a 15% reduction in power consumption at factories. We forecast an additional 6% improvement next year.

GHP

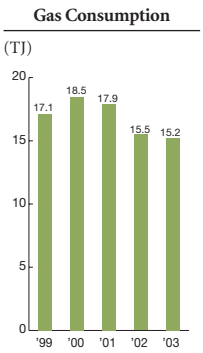
Electricity Consumption



Town Gas Consumption

Air conditioners, including nonstop units in the clean room, are the major consumers of town gas. In fiscal 2003, we reduced energy used in the clean room by utilizing outside air in winter and maximizing the use of water for cooling. As a consequence, energy consumption levels remained on par with the previous year.

Gas Consumption



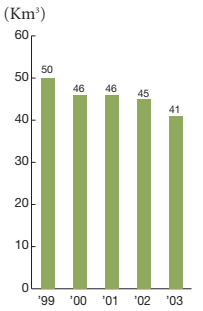
City Water Consumption

Despite an increase in water supply equipment, consumption of groundwater used as a cooling agent is relatively low. Reducing the amount of water used in engine tests has yielded a 9% drop in water consumption.

Water is more frequently used as a coolant for precision instruments. By turning off coolants at night and on holidays, we were able to keep consumption to 200m^3 for the year.

We now have a new water circulation system to cool newly developed vehicle engine testing equipment. As a result, we forecast 2,000m^3 in total groundwater consumption for fiscal 2004.

City Water Consumption



Future Efforts to Conserve Energy

We conserved energy in fiscal 2003 by reducing the power consumption used for air conditioners by switching to town gas-powered air conditioners. We will now concentrate on saving energy used by the clean room air conditioners, which are a major burden on gas consumption, by installing a co-generation system.

Town gas consumption is expected to increase due to new gas-powered air conditioners in production towers. To curb this increase, we will optimize the temperature control systems used in production facilities.

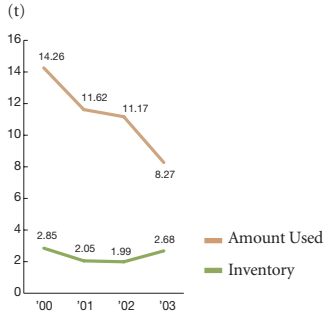
Reducing Harmful Chemical Substances

Safe management and reduction of chemical substances is the key to preventing environmental pollution and maintaining ecosystems. HORIBA completely eliminated harmful chemical substances, such as ozone-depleting substances and chlorine-based organic solvents, used in production during fiscal 1999.

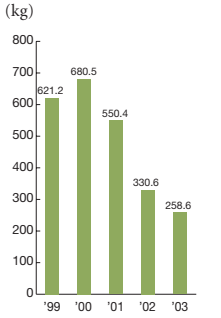
As a part of our Environmental Plan Stage II we formulated chemical substance management guidelines in 2000 to cut usage of harmful and prohibited substances by 30% in fiscal 2003 (compared to fiscal 2000). We managed to exceed this goal with a 42% reduction.

In terms of PRTR chemicals, we used less than 0.21t of lead during the year, a 33% improvement from the previous year. We plan to completely eliminate the use of lead by fiscal 2006. HORIBA handles ten substances that are used in amounts over 10kg annually. Aggregate consumption was 0.65t for fiscal 2003, roughly on par with the previous year.

Use of Chemical Substances



Reduction of Prohibited Substances



Monitoring Drainage

HORIBA has set voluntary control standards based on sewage water laws and Kyoto City sewage water regulations to prevent water contamination escaping from laboratories and factories. The amount of discharge is strictly measured and recorded.

In fiscal 2003, an abnormal amount of n-hexane extract was caused by surfactants containing solvents used in post-construction cleanup. To prevent reoccurrence, we revamped factory control procedures. The amount of all other substances discharged into the sewer fell below set standards.

Preventing Air Pollution

In compliance with voluntary control standards and Kyoto City regulations, we monitor harmful substance emissions into the air through routine measurements. The total emissions of all substances fell below set standards.

Monitoring Noise and Vibration

In accordance with relevant regulations and Kyoto City standards, we regularly measure noise and vibration at the perimeter of HORIBA sites. Only one area was found to exceed set levels, prompting us to upgrade the road surface and replace shutters.

Drainage Measurement and Actual Measurement

(Unit: mg/L) exsept pH
*Under detection limit so omitted

	Items to be Regulated	Kyoto City Regulations	HORIBA Standards	Maximum Value 2001	2002	2003	Non-detectable
Items Concerning Home Environment	pH	5-9		6.1-7.6	6.1-7.6	6.3-8.3	/
	n-hexane extract	5	3.5	2.1	2.1	41.7	/
	phenol	1	0.3	*	*	*	0.002
	copper	3	0.9	0.37	0.37	0.13	/
	zinc	5	1.5	0.236	0.236	0.334	/
	Iron (soluble)	10	3.0	1.110	1.113	0.113	/
	Manganese (soluble)	10	3.0	*	*	*	0.02
	fluorine	8	4.5	0.94	0.94	0.78	/
	nickel	2	0.6	*	*	*	0.02
	boron	10	3	*	*	0.122	0.02
	Cadmium and its compounds	0.1	0.03	*	*	*	0.001
Items Concerning Human Health	cyanide	1	0.3	*	*	*	0.1
	Lead and its compounds	0.1	0.07	*	*	0.006	0.005
	6-chromium	0.5	0.15	*	*	*	0.04
	Arsenic and its compounds	0.1	0.03	*	*	*	0.005
	Mercury and its compounds	0.005	0.0015	0.0005	*	*	/
	trichloro ethylene	0.3	0.09	0.0009	*	0.0010	/
	dichloro methane	0.2	0.14	*	*	*	0.002
	Carbon tetrachloride	0.02	0.014	*	*	*	0.0002
	1,1,1-trichloroethane	3	0.9	*	*	0.0010	0.0005

Note: Regulation figures are from Kyoto City sewage and drainage standards.

Air Measurement and Actual Measurement

	Items to be monitored	Unit	Kyoto City Regulations	HORIBA Standards	Maximum Value 2001	2002	2003	Non-detectable
At Outlet	di-chloromethane	Vol ppm	200	180	abolition	abolition	abolition	
	Xylene	Vol ppm	300	28	< 2	< 2	< 2	
	Ammonia	Vol ppm	100	28	1.2	3.8	< 0.5	
	Fluorine compounds	mg/m³N	5	3.5	< 0.7	< 0.7	< 0.7	
	Hydrogen chloride	Vol ppm	20	6	< 1	< 1	< 1	
	Nitrogen oxides (NOx)	Vol ppm	100	30	< 10	13	< 10	
At the Boundary Line	di-chloromethane	Vol ppm	2	–	abolition	abolition	abolition	
	Xylene	Vol ppm	3	–	< 0.3	< 0.3	< 0.3	0.5under
	Ammonia	Vol ppm	1	–	0.2	0.2	0.4	
	Fluorine compounds	mg/m³N	0.05	–	0.01	0.03	0.01	
	Hydrogen chloride	Vol ppm	0.2	–	0.05	0.04	< 0.02	
	Nitrogen oxides (NOx)	Vol ppm	1	–	0.085	0.069	0.028	

Note: Regulation figures are Kyoto City Sewage and drainage standards.

Use of PRTR (annual amount over 10kg)

(Unit: t)

PRTR No.	CAS No.	Substance	Amount Annual	Emission Air	Water	Soil	Amount Eliminated Neutralized, Broken Down etc.	Amount Transferred Industrial Waste	Amount Recycled Transferred Outside	Amount Consumed Shipped as Product	Main Application
230	7439-92-1	Lead compound	0.208	0.0	0.0	0.0	0.0	0.0	0.077	0.129	Print circuits with solders
47	60-00-4	Ethylene diamine tetra-acetic acid	0.128	0.0	0.0	0.0	0.0	0.0	0.0	0.128	Product additions
253	302-01-2	Hydrazine hydrate	0.104	0.0	0.0	0.0	0.0	0.0	0.103	0.0	Semiconductors
63	1330-20-7	Xylene (including mixtures)	0.061	0.0	0.0	0.0	0.0	0.1	0.004	0.0	Component cleaning
24	68584-22-5	n-Alkyl benzene sulfonate acid (including mixtures)	0.051	0.0	0.0	0.0	0.0	0.0	0.051	0.0	Semiconductors
113	123-91-1	1,4-Dioxane	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Product additions
283	1303-96-4	Borax, including compound	0.026	0.0	0.0	0.0	0.0	0.0	0.0	0.026	Semiconductors
283	1341-49-7	Ammonium hydrogen fluoride	0.021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Semiconductors
283	7664-39-3	Hydrofluoric acid	0.013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Component cleaning
304	1330-43-4	Borax, including compound	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.010	Product additions
		Total	0.651	0.0	0.0	0.0	0.0	0.1	0.235	0.293	

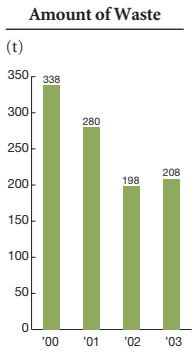
Note: Figures have been rounded to three decimal places.

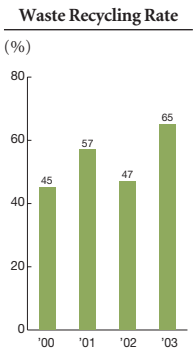
Measures to Reduce Waste

Objectives under Environmental Plan Stage II

1. Reduce final waste at landfill to under 1% of total
2. Reduce waste to under 50% compared to fiscal 2000
3. Boost resource recycling rate to over 75%

In fiscal 2003, final waste at landfill amounted to 21% of total waste, overall waste was reduced by 38.5%, to 61.5% compared to fiscal 2000. Our recycling rate was 64.5% of total waste. The two main reasons for the shortfalls were the inability to separate woods into minute categories and no thermal recycling of discarded plastics. We will bolster efforts to ensure future targets are met. HORIBA does not use incinerators to dispose of waste.





Reusing/Returning Materials

1. Returning Materials to Manufacturers

HORIBA returns certain materials used in production to manufacturers (fee-based and free services) to reduce waste and save resources.

Materials Returned to Manufacturers

Item	Amount Sold (kg)	Value (Thousands of Yen)
Metal	704	21.9
Solder	550	47.7
Total	1,254	69.6

2. Returning Empty Chemical Containers

As it is difficult to recycle vessels that contained chemicals for product development and production processes, scrap glass and plastics are simply discarded. In fiscal 2003, we concluded an agreement with a chemical delivery company to collect these empty vessels. Test trials are already underway. We plan to employ similar companies from fiscal 2004 onward.

Returning Empty Chemical Containers (FY03)

Plastic Containers	68.3 kg
Glass Containers	217.5 kg

Improving Logistics Management

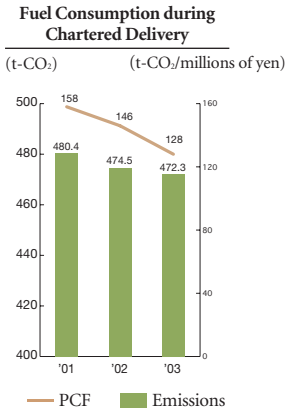
Reducing CO_2 Emissions in Transportation

HORIBA seeks to reduce the amount CO_2 emitted during product distribution by creating more fuel-efficient and cost-efficient ways to transport goods.

Although chartered deliveries make up 71% of the total, we have designed a system that demarcates destinations and delivery dates in fine detail so that we can increase the use of consolidated containers throughout the Group.

HORIBA encouraged private contractors used in chartered deliveries to attain ISO14001 certification in 2001. The positive effects of the ensuing fuel-efficient practices are gradually emerging.

The amount of CO_2 emitted during chartered delivery totaled 472.2t in fiscal 2003, down 1.7% from fiscal 2001, while the power consumption factor improved 19%.



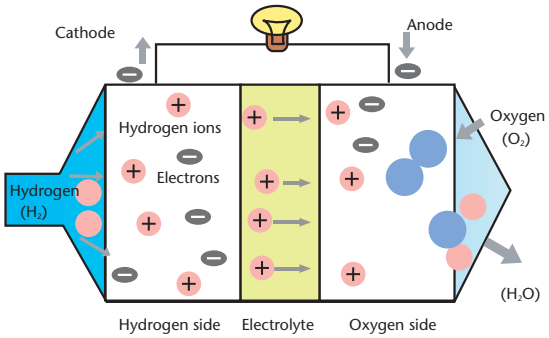
Modal Shift

We have switched from trucks to rail transportation for 2-ton containers to achieve an expected reduction in CO_2 emissions to one seventeenth (6%) of the current level. We intend to implement anti-vibration materials to combat shock and vibration associated with transporting delicate, precision equipment. In a landmark move to cut CO_2 emissions, reduce costs and increase efficiency we plan to cooperate with other companies to combine shipments for transporting goods between Kanto and Kansai.

Rail container

Analytical Technology

A fuel cell is an electrochemical energy conversion device that converts hydrogen and oxygen into water, producing electricity and heat in the process. As water is the only product of the process, fuel cells are not only an efficient source of electricity but are also environmentally friendly. Fuel cells are gaining attention as a potentially viable source of power for automobiles and other essential applications.



HORIBA has developed gas analyzers for fuel cell systems R&D. These fuel cell systems have been supplied to both automobile manufacturers and research institutions. In autumn 2003, we built a dedicated fuel cell research laboratory at our Head Office. Here, we study the volume flow of hydrogen and oxygen and the effect of changes in temperature on the process through our gas analyzers and evaluation equipment.

Fuel cell system evaluation laboratory in Head Office, Kyoto

Environmental Analysis Directives

WEEE: For the recycling of "Waste Electrical and Electronic Equipment"
RoHS: For the "Restriction of the Use of certain Hazardous Substances in electrical and electronic equipment"
ELV: For the reduction and appropriate processing of waste from "End of Life Vehicles"

Analytical Center
Sumiyo Ishikawa

Based on these regulations, hazardous materials (lead, cadmium, mercury, hexavalent chromium etc.) are prohibited in electrical equipment or vehicles exported to the European Union. Many companies already comply with these directives, while others are expected to follow suit in the near future. They must measure the amount of hazardous substance contained in the thousands of parts that comprise electrical equipment and automobiles. HORIBA products purchased via green procurement comply with these regulations.

The following are examples of the amount of harmful substance contained in everyday items.

Mobile phone charger

Cord:
Pb 2850ppm

Colorized end piece
Cd 88ppm

Colorized end piece

Pb 55ppm

[10000ppm = 1%]

HORIBA products are useful in identification of these substances.

ICP ULTIMA2

XGT-5000WR

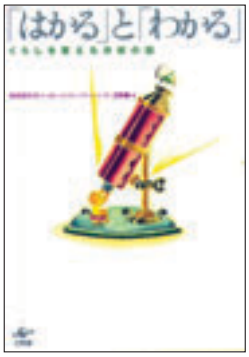
Societal Relations

Enhancing Accountability

Raising Environmental Awareness

HORIBA promotes the following five areas to raise environmental awareness.

1. We disclose information regarding environmental measurement on our website. To celebrate our 50th anniversary, we released "Hakaru"and "Wakaru" to stimulate interest and boost awareness.



2. In cooperation with Kyoto Seika University, we held lectures on environmental issues. Students then translated their thoughts into comic book format. Outstanding creations are displayed on the cover of a monthly community magazine. Pictures are an effective way of depicting environmental problems. HORIBA intends to pursue further collaborative projects in new areas to rouse interest in the environment.

3. HORIBA has supported the Earth Photo Contest sponsored by President Inc. since its inception in 1994. The Ministry of the Environment and Research Institute for Environment and Society also support the event. Every year, hundreds of entries under the theme "Whisper of the Earth" are collected. One of these photos garnered the highest award in the competition in 2003. Photos are also very effective in portraying environmental issues.

4. In October and November 2003, we held classes on acid rain measurement and global warming to show the importance of environment protection for scores of students at schools in Kyoto and Osaka. We will continue to conduct courses and lectures in the future.

Class held at a junior high school in Osaka

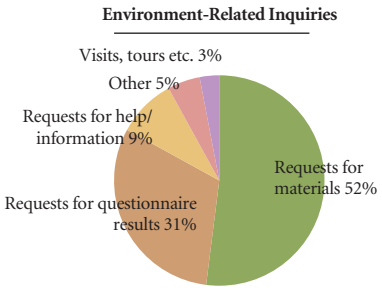
5. As part of our 50 year celebrations, HORIBA initiated a campaign called "Joy & Fun: Eco-Drive EKI-DEN," in Kyoto on January 25, 2003. About 70 employees spent eight months driving vehicles fitted with an on-board exhaust gas analyzer system for 10,000 km around 28 HORIBA sites in Japan, the US and Europe. After covering West Japan, the equipment went to the United States, where it took measurements during a trip from Detroit to California. The next leg of the tour was in Europe before returning to Japan for the final leg in East Japan. Data on carbon monoxide, carbon dioxide and nitrogen oxide were collated under all kinds of traffic conditions, temperatures and altitudes.

At the end of Eco-Drive EKI-DEN

Communication

Inquiries about the Environment

We received 113 environment-related inquiries during fiscal 2003, up 51% from the previous year. All enquiries are collated on a data sheet and analyzed. Requests for materials concerning PRTR Law and RoHS Directive continued to increase.



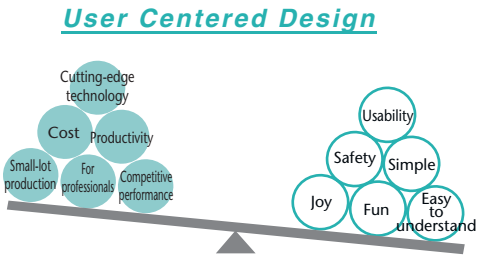
For environmental information, go to:

http://global.horiba.com/about/environment/

Improving Product Quality

At HORIBA, we constantly endeavor to enhance product quality by gathering information through member cards and customer surveys. Newly identified needs are incorporated into product design to increase customer satisfaction. Our goal is to create products that satisfy customer demand by using this feedback information to uncover problems and improve user friendliness. By doing so, we put forward a more uniform image of HORIBA products.

Elements in Product Design




Product packaging (testing unpacking)


Improved version

Social Contribution

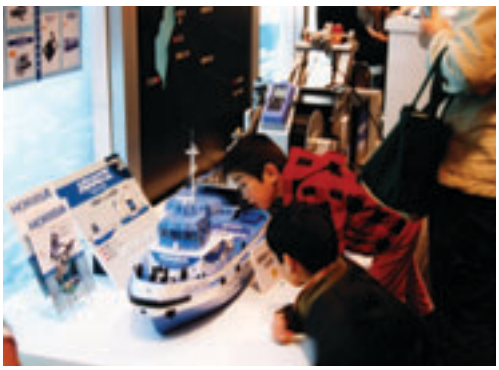
1. Cleanup activities during fiscal 2003

We cleaned along the Kasturagawa River in May and November, and around Company headquarters in June. On May 1, 800 personnel participated in a campaign aimed at returning benefits to the community. A total of 1,800 employees took part in beautification activities in 50 locations throughout Japan. We also helped collect rubbish from the Suma seashore as part of the cleanup Kansai campaign.


Cleanup at Katsuragawa River

2. World Water Forum

The 3rd World Water Forum was held in March 2003. HORIBA exhibited the TPNA, which measures phosphorous and nitrogen levels in water, and the U-20 multi-function water quality monitoring system featuring remote operation.


HORIBA exhibit at 3rd World Water Forum

3. Reduce, Reuse, Recycle Award

We received the Chairman's Award from the Reduce, Reuse, Recycle Promotion Council for the fourth consecutive year.

<Reasons for gaining the award>

- Creating highly versatile plastic recycling by converting plastics to oil
- Collecting and separating paper of differing sizes and designing a mixed form of used paper, thereby avoiding the need for incineration
- Promoting waste reduction and zero-emissions


Chairman's Award from the Reduce, Reuse, Recycle Promotion Council

Corporate Ethics and Risk Management

Promoting Compliance

All laws and regulations must be adhered to in business, irrespective of targets and the pursuit of profit. Respecting rules and fulfilling social responsibility is referred to as "compliance."

At HORIBA, we have formulated compliance management regulations for all directors and personnel.

Code of Ethics

One of HORIBA's primary missions is to supply top quality products to customers around the world. Our code of ethics clearly outlines behavior appropriate for the Company, its directors and employees to assist in accomplishing this goal. The code also incorporates our "behavioral charter" and "behavioral guidelines."

Compliance Promotion System

An attitude that values legal compliance is essential in any organization. The actions of a company's executives and employees reflect on the organization and affect corporate value.
At HORIBA, specially appointed corporate officers plan and implement ways to manage and promote legal compliance throughout the organization.

Compliance officers in each department ensure that regulations are adhered to in daily operations.

Compliance Committee

HORIBA has set up a compliance committee as an independent body to promote awareness of legal issues, propose amendments to the code of ethics and make reports.

Reporting on Illegal Activity

Although legal compliance is a fundamental principle of HORIBA, it is necessary to have a system in place to facilitate speedy response in case breaches occur.

In such cases, we have rules for reporting breaches to ensure swift action. A counseling office helps clear up any gray areas. Official notification is managed via a company-appointed lawyer or email, allowing the reporter to remain anonymous and not fear any fallback.

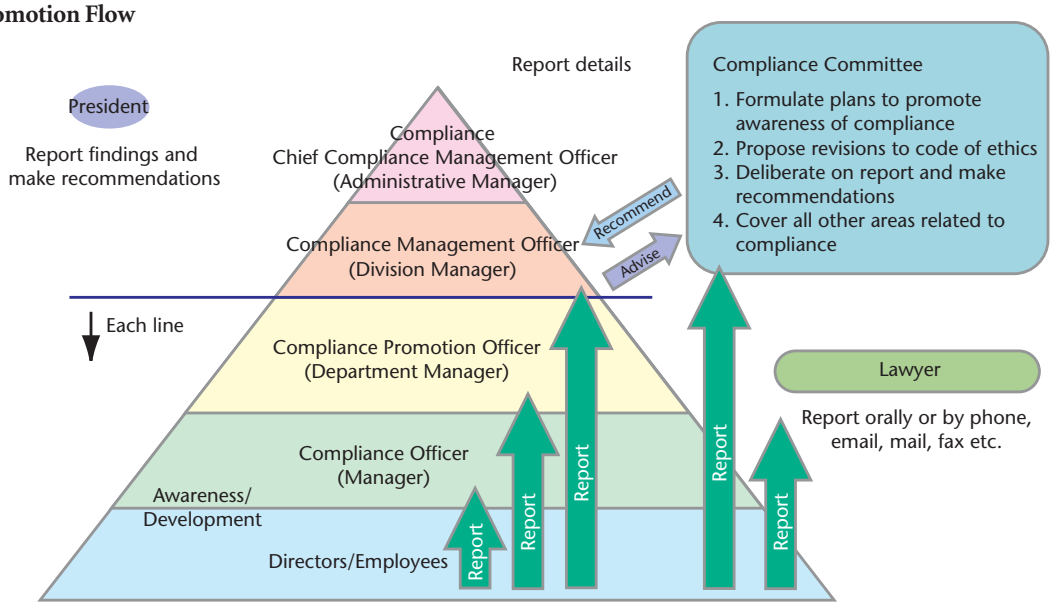
Bolstering Corporate Social Responsibility

Nowadays companies are not only evaluated in terms of legal compliance but also corporate social responsibility (CSR). Whereas compliance stipulates adherence to rules, CSR refers to taking responsibility for actions to increase corporate value.

It is necessary to tackle CSR from a number of different angles - legal compliance, corporate governance, environmental management, risk management, disclosure and contribution to the community.

We plan to strengthen CSR in the future through structural reform and a more efficient system of compliance.

Compliance Promotion Flow



Employee Relations
Increasing Motivation in the Workplace

Health and Safety
At HORIBA, we strive to create a comfortable, accident-free work environment. To reinforce this idea, we introduced OHSAS18001.

In fiscal 2003, we strengthened this system and promoted zero-accidents.

Crafting a Comfortable Work Environment
With a safe and comfortable workplace in mind, HORIBA formulates a new health and safety plan every year. Areas to be inspected are designated each month at all Group companies. A health and safety officer conducts safety patrols and specifies, then evaluates potential triggers to danger. We constantly revise and improve systems for safety, provide training and give medical exams for different illnesses.


Safety patrol by top management

Sickness and Absenteeism

Year	1999	2000	2001	2002	2003
Sickness rate	0.24	0.39	0.42	0.37	0.48
Cases of absenteeism	35	58	62	56	69
Absenteeism rate	0.21	0.36	0.47	0.35	0.38
Days absent	625	1,073	1,130	1,055	1,084

Facing Mental Health
Employees are a company's most valuable asset. Keeping a fit mind and body is therefore of utmost importance. We find mental health issues are now more prevalent than ever. With this growing issue firmly in mind, we provide education on mental health care to all managers. We also introduced the Employee Assistance Program (EAP) to aid employees facing difficulties. We will continue to enhance efforts in this area.

Bolstering Employee Relations
HORIBA aims to be number one in the global arena. The driving force behind this ideal is our technological expertise, which allows us to develop unique, high quality products. To boost customer satisfaction, we always endeavor to raise the quality of our product and service offerings.


Corporate Human Resources
Education Department
Toru Nishikawa

In fiscal 2004, we started operating the HORIBA Group as one company to increase corporate value and maximize synergies. Each employee will challenge lofty goals as we aim to lift the bar throughout the organization.

Individual Goal Setting and Result Sharing
We have clarified the steps that need to be taken by each individual to realize company and departmental objectives. We introduced a goal setting system in 2000 to foster a challenging spirit in all personnel. The targets and results pertaining to individual objectives, which reflect management objectives, can be seen on the company intranet. This goal setting system bolsters collective strength and creates a work environment that maximizes synergies.

In fiscal 2004, we commenced a system whereby personnel can apply via the intranet to be transferred to an optimal location or position to boost their career. This process helps create a more dynamic work environment.

Developing Global Personnel
HORIBA products are sold in a diverse array of global markets, where needs are growing year by year. We therefore encourage our employees to adopt a global perspective. In 1977, we introduced an overseas trainee program whereby a number of personnel each year receive specialized education at an overseas affiliate. In addition to public courses, which personnel are free to choose, we introduced business training in fiscal 2003 to further boost employee skills.

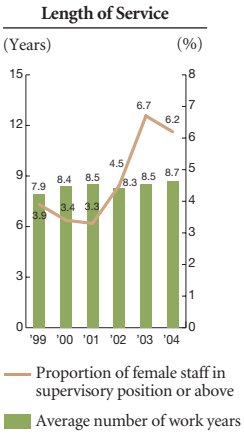
Overseas Trainees

Fiscal Year	2000	2001	2002	2003	2004 (Plan)
Number	2	2	5	7	10


Overseas trainees

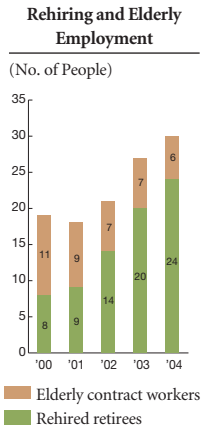
Maximizing Potential

At HORIBA, we constantly promote female staff to managerial positions and create a work environment that maximizes their potential. We are proactive in utilizing both genders as instructors to reinforce our anti-discriminatory stance. The results of this program show we are able to keep female staff longer than the norm. The number of female personnel working in supervisory positions or above has almost doubled relative to 2000.



Rehiring Retirees and Employing the Elderly

To take advantage of the extensive knowledge and experience of retired workers, we introduced a system in 1986 that allows rehiring retired workers up to the age of 65. They are then free to continue working over and beyond the normal retirement age. We also actively employ contract workers between the ages of 55 and 65 to utilize their expertise. Six month employment contracts can be renewed an unlimited number of times until age 65.



Removing Barriers for the Physically Challenged

Irrespective of ability or disability, we are aggressive in our approach to ensuring all HORIBA personnel are provided with a work environment that offers both "joy and fun." Since fiscal 1995, the proportion of physically challenged employed at HORIBA has exceeded the rate required by law. We received an award from the mayor of Kyoto in recognition of our efforts. Two HORIBA employees participated in the Kyoto Abilympics in February 2004. One of these employees garnered an outstanding award in the CAD category from the mayor of Kyoto.

Proportion of Physically Challenged Workers

Fiscal Year	1999	2000	2001	2002	2003
%	1.9	2.3	2.0	1.8	1.9

Putting Family First

To strike a balance between work and family, we implemented a maternity leave system in 1992, a care-giving leave system in 1999 and a short-term work system. To backup these systems and make it easy to take time off when required, we arrange for substitute workers to take over until the employees returns to work. This allows the employee to feel at ease when away. Every year many employee-mothers return to work after taking maternity leave.

Proportion of Workers Taking Maternity Leave

Fiscal Year	1999	2000	2001	2002	2003
%	2	4	1	3	2

In other efforts, company executives host a party each month for employees whose birthday falls in that month. These parties provide an ideal opportunity to strengthen communication between all levels of the organization.

Company open days allow family members to visit the workplace so that they too can experience the "joy and fun" of HORIBA.

Company open day

Customer Relations
Boosting Customer Satisfaction

Improvement in Quality Assurance Systems

At HORIBA, we guarantee that all products and services are of the same high level of quality in all corners of the globe.

To achieve this, we established technology standards and safety regulations for each Group company, while also requiring them to implement quality and environmental management systems.

By promoting internal regulations and standards for all Group companies we are able to guarantee a high level of quality in products we provide to our customers.

Quality and Environmental Management System

Product Planning	Customer demands/Market information
Product Design	Production responsibility/Safety/Legal requirements/Green procurement/Export Trade Control Ordinance/Environmental conformity design/Design review/Servicability/Durability
Product Evaluation	Product assessment/Design inspection/ Investigate customer use
Production	Production process inspection/Shipping inspection
Marketplace	Quality guarantee at customer's
Service	Test operation/After-sales service/Maintenance
Recycling	Reuse and recycle products

Enhancing Communication with Customers

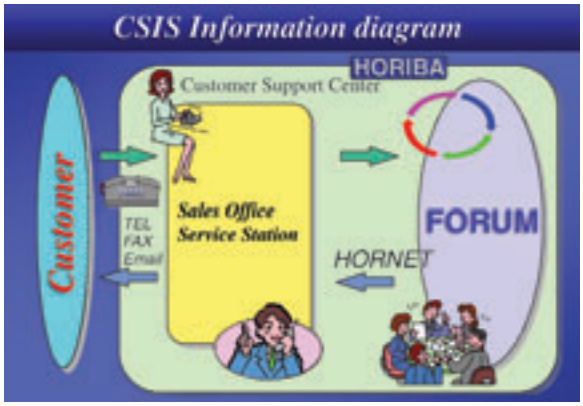
Customer Support Center

A technical service center was established in March 1992 and transformed into the customer support center in November 1994. The Customer Support Center answers inquiries received via phone, fax, website homepage and email.

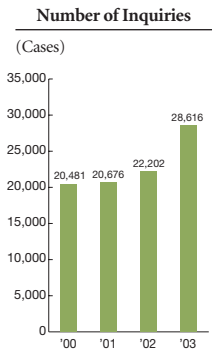
We utilize a system known as CSIS (Customer Satisfaction Information System) to ensure that all customers are satisfied with our response.

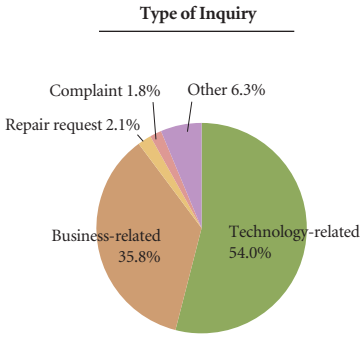
Inquiries are forwarded to the appropriate departments where the data is collated. The data is used to determine ways to boost customer satisfaction through discussions within the department.

We received more than 28,000 customer inquiries in fiscal 2003 and used them to improve operations and product quality.



Breakdown of Inquiries (Total: 28,626)

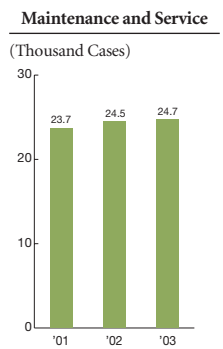


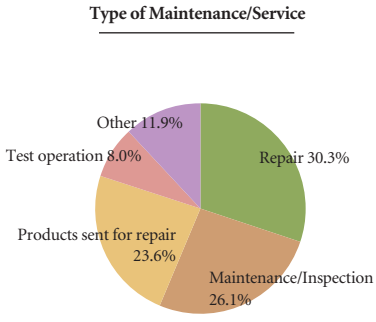


Maintenance and Support

Horiba Techno Service provides all after-sales services and support for HORIBA Group products. Customer support in Japan for maintenance and repair of HORIBA analytical instruments and technology related issues is available from 22 sites nationwide.

Horiba Techno Service responded to no less than 25,000 requests for service in fiscal 2003. Customer requests ranged from regular product testing, overhauls, repairs and maintenance contracts to component supply, training and technician dispatch.





Environmental Improvement Activities and Report Review

Active Disclosure of Environmental Improvement

HORIBA proactively releases all information regarding business operations and environmental analysis.

We provide information on our environmental improvement activities to stockholders to increase transparency and gain trust. Meanwhile, we utilize third party evaluations as a means to improve environmental management. Third party assessments focus on social trends and system establishment. We also actively participate in environmental report readings and other evaluation opportunities. This activity helps us translate a wide range of opinion into future policies for both the production and financial sides of our business. We plan to conduct even stricter examinations of our environmental activities in the coming years to further raise trust.

Internal audits and yearly inspections by third parties check the appropriateness and effectiveness of our integrated management system (IMS) and measure how closely our reporting adheres to guidelines set by the Ministry of the Environment. Results of the assessment are as follows.

1. Examination of environmental improvement activities

1) Results from internal audit

- The internal audit was conducted by 177 officers evaluating the integrated quality, environmental and safety management system (IMS) in all 59 departments on two separate occasions.
- Timeframe: Approx. 2.5 hrs per department (Total: 1,475 hrs)
- Results:

Cases of noncompliance:	81
Departments with cases of noncompliance:	45 (average 1.89 cases)
Departments in full compliance:	14

Causes of Noncompliance

Action plan deficiency	26%	Document management deficiency	16%
Education planning deficiency	14%	Objectives setting deficiency	11%
Risk assessment deficiency	11%	Other	22%

Although we attempted to correct these noncompliant areas to prevent reoccurrence, our efforts to install a new system were not always effective. Accordingly, we revised the PDCA cycle and held training on a general and individual basis. We also reformed our operating systems through each ISO committee.

2) Results of third party audit

Every year the Japan Quality Assurance Organization (JQA) evaluates our management systems. In fiscal 2003, this institution examined our environmental management system ISO9001, which is in its eleventh year of operation, and ISO14001, which is in its seventh year. Our health and safety management system OHSAS18001 was examined in June 2004.

- Results:

Major deficiencies: 0

Minor deficiencies: 16 (quality (3), environment (3), health and safety (10) with three overlapping). We have formulated plans to correct these deficiencies and prevent reoccurrences.

2. Evaluation of environmental report

Creation of this report was based on the Ministry of the Environment's guidelines (2003 version). The following table shows the extent of conformity within these guidelines.

	No.	Item	Inclusion	Page/Topic
1) Basic items	(1)	Introduction from management	○	p2 Top commitment
	(2)	Foundations of reporting (organization (boundary), period, field)	○	p-C2 Company profile, editorial policy
	(3)	Business outline	○	p1 Business outline, results
2) Targets, objectives and achievements	(4)	Environmental policy in business activities	○	p3 Environmental management policy
	(5)	Targets, objectives and achievements from activities	○	p4, 5 Environmental Plan Stage II & III
	(6)	Material balance of business activities	○	p7 Outline of environmental burden
	(7)	Environmental accounting information	○	pp8, 9 Environmental accounting
3) State of Environmental Management System (EMS), its organization and implementation	(8)	State of EMS	○	p12 Environmental Management System (EMS)
	(9)	State of environment-friendly supply chain management	○	p17 Promotion of green procurement
	(10)	State of R&D of technologies for environmental conservation	○	p14 Environment-friendly product design
	(11)	State of the disclosure of environmental information and communication	○	p22 Societal relations
	(12)	State of compliance with environmental regulations	○	p13 Compliance and monitoring of regulations
	(13)	State of social contribution related to environment	○	p23 Social contribution activities
4) Measures to reduce environmental burdens	(14)	Total energy consumption and measures for its reduction	○	p18 City Water Consumption
	(15)	Amount of materials used and measures for its reduction	○	p16 Green factory
	(16)	Amount of water used and measures for its reduction	○	p18 Logistics management
	(17)	Greenhouse gas emissions and measures for its reduction	○	p18 Prevention of global warming
	(18)	Amount of chemical substance emissions, amount transferred and measures for its reduction	○	p19 Reduction of chemical substances harmful to environment
	(19)	Amount of production and sales	○	p9 Stated in environmental accounting (related indicators)
	(20)	Total amount of waste, amount of final disposal of wastes and measure for its disposal	○	p20 Logistics management
	(21)	Amount of drainage and measures for its reduction	○	p18, p9 (2) Environmental Accounting
	(22)	State of environmental burdens and measures for its reduction	○	p20 Logistics management
	(23)	State of green procurement and its promotion	○	p13 Green procurement activities
	(24)	State of products and services that reduce environmental burden	○	p14, 15 Environmental conformity design, product reuse
5) Social activities	(25)	State of social activities	○	p25, 26, 27 Employee- and customer-relations

Chronicle of Environmental Activities

	Measures Taken by Horiba				Year	Relevant World Events
	Year	Environmental Preservation/Improvement Activities	Year	Technical development/External Activities		
1970s			1950	• Developed a glass electrode pH meter and entered the analytical instruments business.	1958	• Industrial Wastewater Control law
			1954	• Developed a non-dispersive Infrared Gas Analyzer.	1967	• Basic Anti-Pollution Law
	1968	• Launched a series of measuring instruments for water treatment and water quality monitoring systems.			1968	• Clean Air Law
		• Established an environmental control section within the company.	1970	• Launched a series of measuring instruments for water treatment and water quality monitoring systems. Started marketing air quality and water quality for the monitoring systems.	1970	• Clean Water Law • Revised Clean Air Act (U.S.A.)
	1971	• Nine HORIBA personnel passed the national examination for pollution control supervisor • Established a pollution control system within the company.			1971	• Environment Agency • Qualification of Pollution Control supervisor
	1971.7	• Registered the company's wastewater treatment facilities in line with legislative requirements for water pollution control.			1973	• Regulation to Prevent Gross Water Pollution
	1978.3	Connected public sewage by building sewage systems	1979	• Became a charter member of the Japan Environmental Technology Association.		
1980s	1982.8	Established a committee for environmental management within the company.	1988	• Donated the Sensorize Tower, a display on air pollution monitoring, to Kyoto City	1988	• Montreal Protocol on Substances that Deplete the Ozone Layer
1990s	1990.2	Reduced the use or switched to substitutes for chlorine-based organic solvents and the specified CFCs	1991	• Presented vehicle for measuring air pollution to Chinese Academy of Sciences • Opened "HONEST" website on acid rain	1991	• The Environment Charter: The Federation of Economic Organization
			1992	• Donated acid rain measuring equipment to elementary school in Kyoto through accumulated bell marks • Participated in the Eco Brazil Exhibition held concurrently with the UNCED. • Independently developed and commenced operations of the Returnable Display Booth	1992	• United Nations Conference on Environment and Development
	1993.4	• Stopped the use of 1,1,1-trichloroethane and switched to dichloromethane • Eliminated use of CFC-113 (shifted to HCFC-225b)	1993	• Introduced an air background observation system to the Minami Torishima Observatory, Japan Meteorological agency	1993 1994	• Basic Environment Law • United Nations Framework Convention on Climate Change
	1994	• Stipulated the companys contribution to environmental management in the corporate philosophy.	1995	• Published message regarding environmental issues in Kyoto magazine, "Club Fame" in conjunction with Qinghua University		
	1995.9	• Commenced preparation for EMS (BS7750) • Started the training of environmental auditors within the company			1995	• Packaging Materials Recycling Law
	1996.1	• Launched the project to qualify for ISO14001 certification. • Stipulated the company's environmental philosophy and the environmental policy.	1996	• Developed air pollution monitoring equipment for HAPs	1996	• Appeal for Environmental Preservation by the Federation of Economic Organization
	1996.12	• Started activities to discontinue the use of substitutes for CFCs and dichloromethane.				
	1997.6	• The HORIBA environmental management system was certified as meeting ISO-14001 requirements	1997	• Organized an internal meeting on the environ ment in corporation with the foreign participants of COP3 held in Kyoto. • Participated in the ECO JAPAN exhibition held during COP3.	1997	• Kyoto Protocol to the United Nations Framework Convention on Climate Change at COP3
	1998.3	• Stopped all use of HCF225.				
	1999.4	• HORIBA was designated a 2nd model factory for saving energy. • Started a preparatory work on rules for PRTR.	1998	• Developed water quality monitor that can measure 13 items at once • Dispatched action and guidance personnel through a JICA project to support water quality management in Paraguay	1999	• Promotion of Control of Chemicals Law
2000s	2000.1	• Published the first edition of Gaiareport .	2000	• HORIBA HIT-700 digital driving recorder won an award in the 2nd Eco-drive Contest (March).	2000.5	• Guidelines on Environmental Account
	2000.2	• Stopped all use of dichloromethane, a chlorine-based organic solvent			2000.6	• Basic Formation of Recycling Society Law
	2000.3	• Independently developed total environmental monitoring system HORTEM-21			2000.12	• International Acid Rain Conference at Tsukuba
	2000.4	• Implemented the recycling of packaging materials in line with legislative requirements				
	2001.3	• Established the Environmental Project Stage 2	2001	• Established Bio Applied System, Ltd. to analyze endocrine disruptors. • Sponsored workshops at the 9th International Conference on the Conservation and Management of Lakes	2001.1	• Enforcement of Pollutant Release and transfer Law
	2001.4	• Began project to expand environmental management activities based on ISO 14001 to all the local sales offices			2001.4	• Enforcement of Home Appliances and Food Recycling Law
	2001.11	• English version of environmental report first issued			2001.4	• Enforcement of Green Purchasing Law
	2001.12	• Obtained ISO-14001 at overseas subsidiary HAD			2001.12	• Implemented fifth series of water quality regulation
					2001.12	• Announced method to recover and breakdown CFCs
	2002.3	• Established self-approved environmental mark	2002	• Completed Miyako Ecology Center and intro duced permanent displays	2002.4	• Announced policy to reduce NOx/PM in cars
	2002.10	• Awarded the Chairman's Prize from the 3R (Reduce, Reuse and Recycle) Promotion Committee • Participated in rubbish collection in Kyoto, Tokyo and Nagoya			2002.5	• Framework Convention on Climate Change approved by Kyoto Protocol
	2003.3	• Initiated integrated management system for quality, environment and safety • Introduced lead-free print circuits in 14 products • Started activities to OHSAS 18001	2003.1	• Started round the world relay with car exhaust measuring vehicle	2003.2	• Announced EU directives (WEEE and RoHS) • Implemented law on soil pollution
			2003.3	• Sponsored and held workshops for the 3rd World Water Forum		
			2003.5	• 1,800 employees took part in cleanup activities as part of 50th anniversary		
	2003.10	• Awarded the Chairman's Prize from the 3R promotion Committee for 4th consecutive year	2003.9	• Completed round-the-world analysis of exhaust gas (Ekiden)		
	2003.12	• Commenced green procurement	2003.3~	• Conducted 4th series of lectures on environmental awareness		

HORIBA

Explore the future

HORIBA, Ltd.

2, Miyanohigashi-cho, Kisshoin, Minami-ku,
Kyoto 601-8510, Japan

TEL: (81) 075-313-8121
FAX: (81) 075-316-0194
http://global.horiba.com/

This report was printed on recycled paper.

Printed in Japan