



JAE Group  
**2004**  
**Environmental Report**

Environmental Activities of JAE

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April 2003~March 2004

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## About this Report

This report covers the environmental activities of the JAE Group during the period from April 1, 2003 to March 31, 2004. The scope of this report includes the activities of Japan Aviation Electronics, Ltd. and its domestic plants, consisting of the JAE Akishima Plant, JAE Hirosaki, JAE Yamagata, JAE Fuji, and JAE Shinshu. Also included in the scope of this report are the Akishima-based subsidiaries, JAE Services, Ltd., JAE Engineering, Ltd., and Nikko Logistics.

This report is primarily intended for the company's stakeholders, including its shareholders, investors, manufacturers and customers of the JAE Group, materials and parts suppliers, members of the communities in which the JAE Group operates, and the employees of the JAE Group.

As with last year's report, every effort has been made to ensure that descriptions of the JAE Group's environmental policies and initiatives are presented in a clear and concise manner for the benefit of the reader.

References: Environmental Reporting Guidelines (2000 and 2003 Editions), Ministry of the Environment, Japan

#### About the Cover

##### JAE Group Forest

The JAE Akishima Plant, located in Akishima City, Tokyo, draws its entire water supply including drinking water from city-supplied underground water sources originating from the forested Okutama region of Tokyo. The JAE Group is proud to be the first corporate sponsor of the Tokyo Development Foundation for Agriculture, Forestry and Fishery's corporate adopt-a-forest program. In addition to contributing to the protection of forests for water conservation, the JAE Group hopes that its sponsorship of this program will serve to further raise the environmental awareness of its employees. The cover of this year's report features a photograph of the JAE Group Forest. More information about this initiative is included in the report (p. 5).

# Message from the President

## Balancing Business Management and Environmental Initiatives

The 21st century has been termed “the environmental century,” amid calls for a fundamental reassessment of our lifestyles and business activities. Modern society has led to pollution of our earth’s environment, which, if allowed to continue, will jeopardize the environment for future generations. The time has come for corporations and individuals to collaborate in a serious effort to address environmental issues.

The JAE Group has a long history of actively promoting environmental management. In FY 2003, the JAE Group placed a strong emphasis on practicing environmental management on a larger scale through the involvement of Japan Aviation Electronics Industry, Ltd., JAE Group subsidiaries, and many of its partner companies. Furthermore, the JAE Group has created a new environmental advisor program to reinforce the company’s green procurement initiatives.

The environmental advisor program takes select individuals from JAE Group companies and trains them to perform as certified environmental advisors. These advisors are responsible for visiting partner companies in order to conduct surveys and provide guidance on establishing environmental quality. This program plays a key role in ensuring that environmental quality is maintained at each partner company. It also enables the company to satisfy the demands of our customers on a collective level, in tandem with the environmental initiatives of the JAE Group.

In June 2004, the JAE Group became an official sponsor of the JAE Group Forest under the Tokyo Tokyo government’s adopt-a-forest program for the Okutama region of Japan. The JAE Group is the very first corporate sponsor of this forest conservation program, and we hope that our involvement in this program will help to further raise the environmental awareness of our employees. Our main plant, the JAE Akishima Plant, draws its entire water supply from city-supplied underground water sources originating from the forested Okutama region. The JAE Group is a strong supporter of the adopt-a-forest program’s efforts to conserve water sources in the Okutama region as part of the company’s overall agenda of environmental initiatives. In June of this year, the Mayor of Akishima City and other officials were invited to participate in a tree planting ceremony held at the JAE Group Forest. Starting in the fall of 2004, employees of the JAE Group will begin to plant trees

and clear undergrowth in the JAE Group Forest.

The JAE Group is also actively involved in efforts to conserve energy in its daily business activities as a measure against global warming. These efforts include sizable investments in energy-efficient equipment, together with cost reduction measures including successfully improving the efficiency of HVAC systems. The JAE Group has also embarked on a business process reengineering (BPR) effort that has produced considerable results for the company. During the last 18 months, the JAE Group achieved its target for reducing paper consumption well ahead of schedule, and has subsequently established a more ambitious target.

On a community level, the JAE Group has continued to collaborate with other local corporations in order to share environmental data. However, the recent acquisition of ISO 14001 certification by the Akishima City government has resulted in a more progressive framework for collaboration between the city government and the private sector on environmental issues. This has enabled the JAE Group to develop a mutually cooperative relationship with the Akishima City government, which has led to our participation in city-sponsored environmental symposiums and lectures.

The 2004 Environment Report summarizes the details of environmental initiatives conducted by the JAE Group during FY 2003. The companies of the JAE Group have made a commitment to striking a harmonious balance between the management of our businesses and the implementation of environmental initiatives, while striving to be model business enterprises that fulfill their social and other responsibilities as good corporate citizens. We welcome your candid comments regarding our activities.

June 2004



President  
Japan Aviation Electronics Industry, Ltd.

A handwritten signature in black ink, appearing to read "M. Shingoda". The signature is stylized and written over a white background.

# Corporate Data

## Company Outline

Company name: Japan Aviation Electronics Industry, Ltd

Established: August 20, 1953

Capital: ¥10.69 billion

Head Office: 1-21-2 Dogenzaka, Shibuya-ku, Tokyo  
150-0043, Japan  
Tel: (81) 3-3780-2711  
Fax: (81) 3-3780-2733

Akishima Plant: 3-1-1 Musashino, Akishima, Tokyo  
196-8555, Japan  
Tel: (81) 42-549-9112  
Fax: (81) 42-549-9559

No. of employees: 4,282 (consolidated) / 1,744 (non-consolidated) as of March 2004

Sales: ¥113.6 billion (consolidated) / ¥95.6 billion (non-consolidated) for year ended March 2004

Group companies: Ten domestic subsidiaries, 11 overseas subsidiaries

Consolidated subsidiaries: Six domestic companies, eight overseas companies

Website: [www.jae.co.jp](http://www.jae.co.jp)

## Business Overview

Since its foundation, the JAE Group has supplied customers with a wide range of leading edge products, including connectors, electronic components, aviation and aerospace equipment, optoelectronic devices and system equipment. The JAE Group has developed very sophisticated technologies, based on its corporate philosophy to "Explore, Create and Put into Practice."



Connectors



System Equipment



Aviation/Aerospace Equipment and Related Products

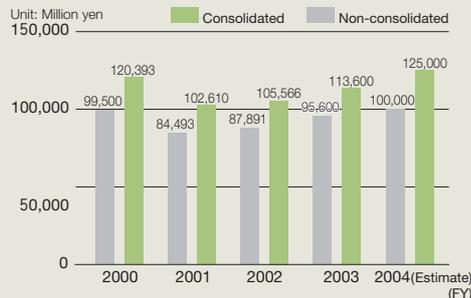


Optoelectronic Devices

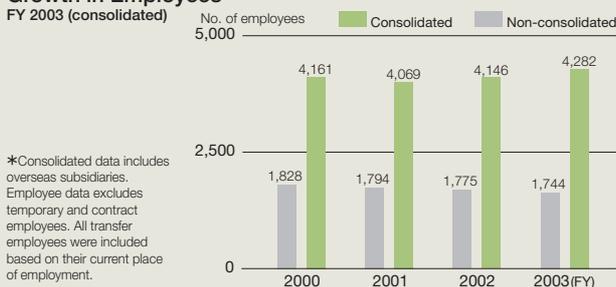
For more information about our products, visit us at

<http://www.jae.co.jp/e-top/eproduct/index.asp>

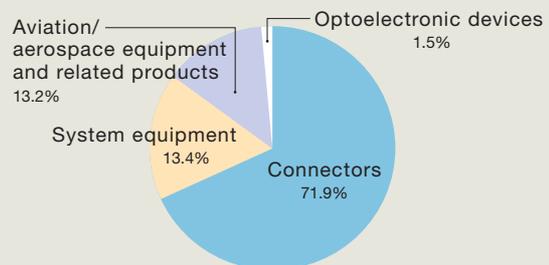
### Growth in Sales



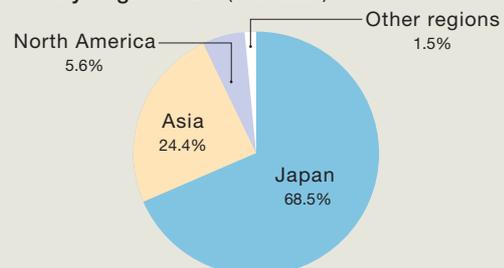
### Growth in Employees



### Sales by Sector FY 2003 (consolidated)



### Sales by Region FY 2003 (consolidated)



# Introduction to the JAE Group Environmental Report 2004

The 2003 fiscal year was an extremely significant year in terms of the environmental initiatives of the JAE Group. In FY 2003, all of the JAE Group's domestic and overseas manufacturing subsidiaries acquired ISO 14001 certification, and the president reaffirmed the JAE Group's emphasis on environmental management. The company also achieved its targets for toxic substance reduction, energy conservation, and industrial waste reduction. Furthermore, the JAE Group continued to aggressively pursue its green procurement initiatives in response to the requirements of its customers. These efforts included new initiatives to enhance environmental quality and support environmental management at JAE Group companies and their partner companies.

I have consistently emphasized the importance of adopting a macro approach to the environment. The issue of global warming is just one example of the need for a



**Tatsuya Sugiura**

Executive Officer in Charge of  
Environmental Management  
Serves only as Advisor to JAE  
as of publication of this report

macro approach. The JAE Group's sponsorship of the Tokyo government's adopt-a-forest program contributes to reduced CO<sub>2</sub> emissions. At the same time, our involvement in this program offers an opportunity for the company's employees to interact directly with nature, leading to an enriched commitment to environmental management among our employees. Looking forward, the JAE Group will further expand the scope of its environmental management while continuing to display a commitment to corporate social responsibility as a means of contributing to society as a whole.

June 2004

## Spotlight: JAE Group Forest

The JAE Group is continually in search of environmental initiatives that serve to raise the environmental awareness of its employees through active employee participation. In February 2003, the company was approached by the Akishima City government in order to gauge its interest in the Tokyo Development Foundation for Agriculture, Forestry and Fishery's corporate adopt-a-forest program. This idea was met with instant approval from the President and was spearheaded within the company by Tatsuya Sugiura, Executive Officer in Charge of Environmental Management.

As part of the adopt-a-forest program, the JAE Group had adopted two parcels of land totaling 1.33 hectares. The parcels are located at the midpoint of the Nokogiriyama Trail between Nishi Okutama and Hinoharamura in Tokyo. On June 22, 2004, the JAE Group held a tree planting ceremony to commemorate

the company's involvement in this forest conservation initiative. Held under sunny skies, the well-attended ceremony included the participation of the President and other officials of the JAE Group, together with the Mayors of Akishima City and Okutama City and the Tokyo Forestry Office Commissioner.

Starting from the fall of 2004, JAE Group employees will begin to plant trees and clear undergrowth as part of an annual program.



Tree Planting Ceremony at JAE Group Forest

# Corporate Philosophy, Charter of Corporate Conduct, Environmental Charter

## JAE Corporate Philosophy

In response to the boundless, changing needs of society, our duties are never-ending exploration and creation. Business enterprise must essentially be like the earth as it spins and revolves through the boundless universe, in the midst of incessant change.

Exploration and creation are born in an environment of freedom and independence, and raised by relentless quest and actions which vigorously transcend barriers and difficulties.

Practicing this principle and further making contributions to society— this more than anything is the goal of our business, and the source of our development.

## JAE Charter of Corporate Conduct

Revised: July 5, 2004

In accordance with its corporate philosophy of exploration, creativity, and practical application, the JAE Group pledges to maintain a fair profit and enhance its corporate value while striving to contribute to the creation of a sustainable society. As a good corporate citizen, the JAE Group pledges to practice regulatory compliance and fulfill its social responsibility to its stakeholders, which include customers, shareholders, investors, suppliers, and local communities.

### 1. Fair and honest corporate activity

In all countries and regions, the JAE Group will practice regulatory compliance and pursue its corporate activities in a fair and honest manner. The JAE Group will participate in open and free competition, while maintaining a healthy and appropriate relationship with politics and government.

### 2. Pursuit of customer satisfaction

The JAE Group will provide high quality products and services that are useful to society and show careful consideration for safety. Furthermore, the JAE Group will strive to promote creative and leading edge technology development, and aggressively develop new products while expanding its business into new areas.

### 3. Open corporate activity

The JAE Group will practice swift and accurate disclosure of necessary corporate data, in order to improve the openness of its corporate activities.

### 4. Balance with the environment

As a member of society, the JAE Group pledges to respect the natural environment and vigorously pursue corporate activities that are friendly to the environment. Furthermore, the JAE Group will contribute to the creation of a sustainable society and practice environmental management.

### 5. Balance with society

The JAE Group will recognize the diversity of countries and regions, respect culture and customs, and contribute to their development. Furthermore, the JAE Group will pursue social initiatives as a good corporate citizen.

### 6. Respect for human rights

In all of its corporate activities, the JAE Group will respect human rights and oppose unfair discrimination and labor practices that entail child labor or forced labor.

### 7. Respect for employees

The JAE Group will respect the individuality of each employee and strive to create a safe and comfortable workplace environment where employees are able to utilize their talents to the fullest.

### 8. Management of intellectual assets and information

The JAE Group recognizes the importance of intellectual assets and information, and will manage them in an appropriate manner.

## JAE Environmental Charter

Established: June 1993 Revised: December 2002

### Environmental Philosophy

As a good corporate citizen, the JAE Group pledges to respect the natural environment and contribute toward the creation of a prosperous society, by conducting its business in a manner that is friendly to the environment and full of vitality.

### Action Policies

The JAE Group recognizes the significance of the 21st century as “the environmental century.” Accordingly, management shall place critical emphasis on the challenge of contributing to socioeconomic prosperity that is in harmony with the environment, in order to aid in the creation of a sustainable society. The employees of the JAE Group shall abide by laws and regulations regarding environmental conservation and the protection of resources. Furthermore, each employee shall make it a priority to employ environmentally friendly practices in each and every aspect of the company’s business, by abiding by the following action policies:

1. Establish environmental goals and targets, and execute plans for improvement. Furthermore, implement a framework for periodic reassessment of the goals, targets and improvement plans, in order to prevent pollution and provide a platform for continual improvement of the company’s environmental management initiatives.
2. Practice full compliance with environmental laws, regulations and treaties, and establish a code of conduct as needed. Furthermore, strive to improve all efforts to conserve the environment.
3. Establish an environmental management organization and an administrative structure that is headed by the Executive Officer in Charge of Environmental Management. This organization shall be responsible for ensuring that corporate regulations for environmental management are always kept up-to-date.
4. Seek to reduce environmental impact, starting with the product design phase. Furthermore, seek to reduce the use of toxic substances and to conserve energy and resources, while reducing industrial waste and placing a priority on recycling.
5. Conduct periodic internal environmental audits, and strive to improve environmental management systems.
6. Disseminate the JAE Environmental Charter and ensure that all employees are familiar with the Charter, in order to raise the level of environmental concern among employees.
7. When necessary, disclose proprietary environmental technologies and information concerning environmental management.
8. Ensure that the JAE Environment Charter is made available to the public.

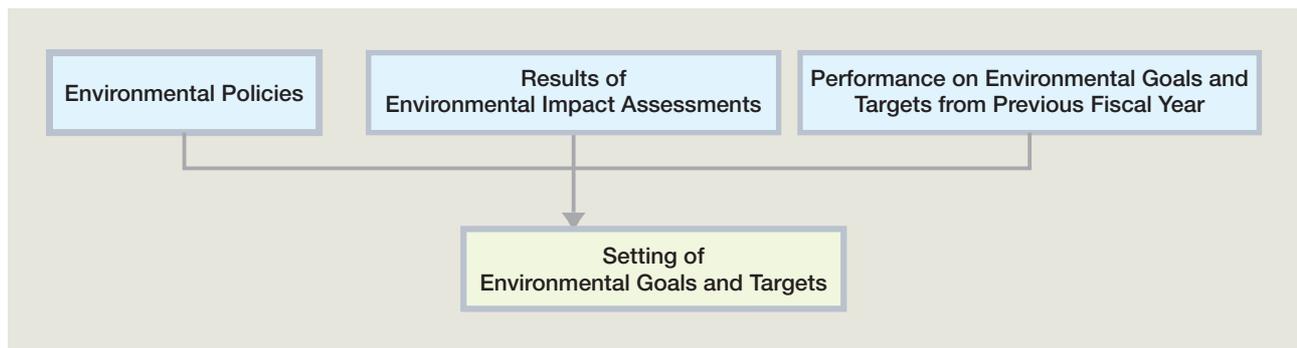
# Environmental Goals and Targets, and Results — Environmental Management

The JAE Group sets environmental goals and targets for each of its plants, which in turn guide its environmental initiatives. Environmental goals and targets are established based on the company's environmental policies, the results of environmental impact assessments conducted for each plant, and in response to trends outside the company.

## Setting Environmental Goals and Targets

Each JAE Group company establishes annual goals and targets together with mid-range goals covering a three-year period. The goals and targets are established in accordance with the company's environmental policies and the results of

environmental impact assessments. The performance against environmental goals from the previous fiscal year is also taken into consideration. Mid-range goals are reassessed every year in order to reflect changes occurring outside the company.



## Summary of FY 2003 Initiatives

The performance against FY 2003 targets by each plant is shown on p.19. Some targets were not achieved. In particular, one plant failed to achieve its target for total industrial waste output, although it was nevertheless able to achieve zero

emissions by recycling all of that industrial waste. Overall, the JAE Group achieved favorable results in FY 2003, considering the more challenging environmental goals it was striving to meet and the increased production volume.

## Future Environmental Goals and Targets

Until now, the JAE Group has established separate environmental goals and targets for its subsidiary companies to reflect the state of development of the environmental management system at each company. Previously, the environmental goals and targets of each subsidiary were sufficiently similar to enable the company to establish group-wide goals and targets. However, the goals and targets of each subsidiary have become increasingly dissimilar due to an increasing focus on maintaining zero emissions targets and reducing the use of chemical substances, which are outside the scope of their ISO 14001 environmental management systems.

In response to these changes, the JAE Group has expanded its business process reengineering efforts beyond the scope of its ISO 14001 environmental

management. Further, the JAE Akishima Plant will take a leading role in terms of establishing a group-wide policy for green procurement during FY 2004, for later deployment by JAE Group subsidiaries. The JAE Group will also strive to tackle global warming on a group-wide scale.

As a further response to recent changes, the JAE Group will establish a unified system for environmental management that encompasses all of its subsidiaries in Japan. This effort will involve establishing a group-wide direction for environmental initiatives, while taking into account the unique goals and targets of each subsidiary. By the end of FY 2004, the company will establish unified goals and targets that encompass all of the JAE Group's domestic manufacturing subsidiaries.

# Environmental Management Systems

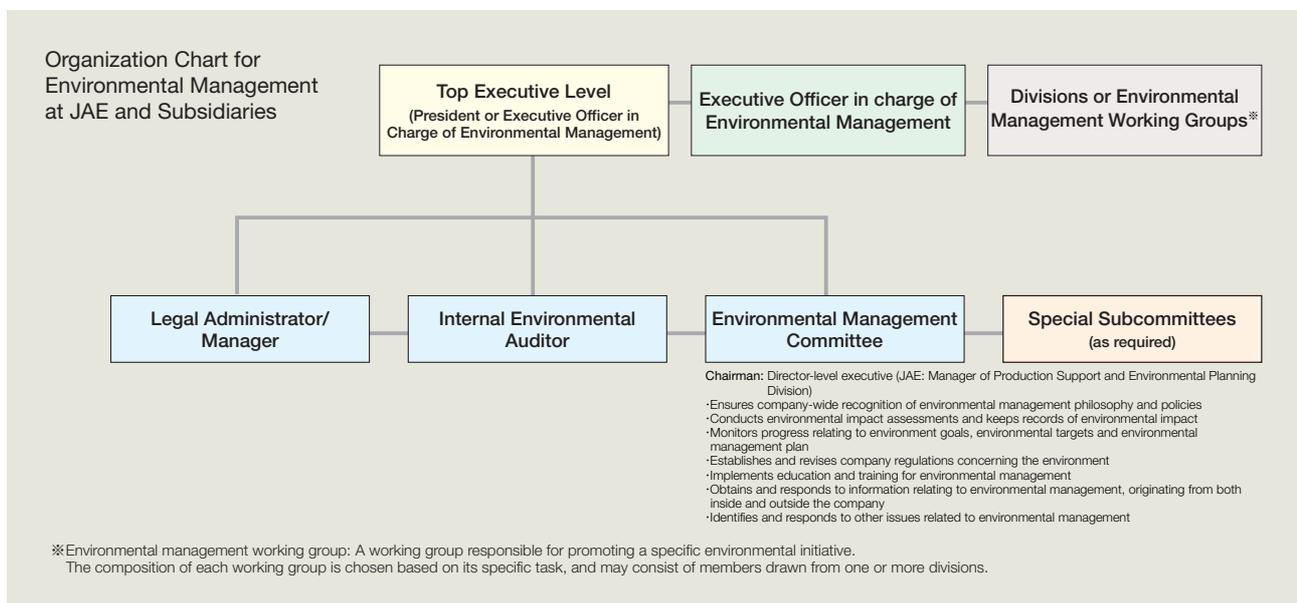
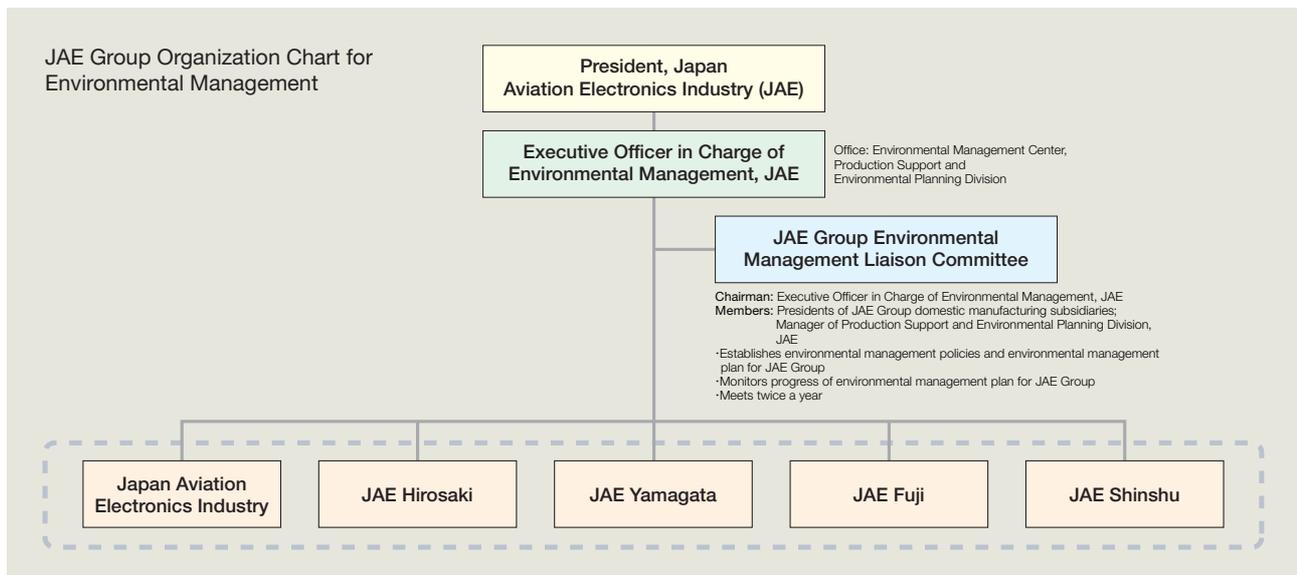
The JAE Group is committed to establishing environmental management systems based on the ISO 14001 standard, in order to promote environmental conservation initiatives as part of its day-to-day business. Environmental policies and goals are established based on the company's business activities and current social trends. The JAE Group then forms annual targets and actions plans that outline the initiatives to be undertaken in the coming year. The results of these initiatives are later assessed and reviewed in order to improve the environmental management systems on a continual basis.

## Framework for Environmental Management

Environmental management at JAE Group companies occurs under the direction of the JAE Group Environmental Management Liaison Committee and the Environmental Management Committees from each subsidiary. The JAE Group Environmental Management Liaison Committee is responsible for promoting environmental management initiatives for the entire JAE Group, and is chaired by the Executive Officer in Charge of Environmental Management. The members of the Committee are comprised of the Manager of the Production Support and Environmental Planning Division and the various presidents of the JAE Group's domestic manufacturing subsidiaries. The

Committee is responsible for establishing environmental management policies and the environmental management plan for the entire JAE Group.

Each JAE Group company has an Environmental Management Committee that is responsible for managing the company's environmental management system. The committees also monitor the progress of environmental management plans, set goals and targets, and identify the key areas for environmental management. The committees are in turn assisted by the work of special subcommittees that establish concrete targets and strategies relating to the key areas for environmental management.



## ISO 14001 Certification

The JAE Group acquired ISO 14001 certification for all of its domestic manufacturing plants in FY 2000. During FY 2003, the JAE Akishima Plant expanded the scope of its ISO 14001 certification to all Head Office staff and sales divisions and to its logistics subsidiaries.

The JAE Group has consistently promoted environmental initiatives that encompass the company's manufacturing, sales, and logistics operations. However, the recent expansion of the scope of the company's ISO 14001 certification to include sales and logistics operations enables the JAE Group to create a group-wide system for environmental initiatives. The JAE Group is also considering expanding the scope of its ISO 14001 certification to include its local sales offices.

In February 2004, the JAE Group's environmental management system was expanded to include JAE Hakko, Ltd. ISO 14001 certification was later acquired for JAE Hakko, Ltd. in June 2004.

Site	Certification Date	Certification Body	Certification No.
Akishima Plant, Japan Aviation Electronics	1998.08.07 (Recertified: July 2004)	JQA	JQA-EM0198
JAE Hiroasaki	1999.12.24 (Recertified: December 2002)	JQA	JQA-EM0658
JAE Yamagata	1999.11.12 (Recertified: November 2002)	JQA	JQA-EM0588
JAE Fuji	2000.02.10 (Recertified: February 2003)	JQA	JQA-EM0713
JAE Shinshu	2000.02.10 (Recertified: February 2003)	JQA	JQA-EM0771

JQA: Japan Quality Assurance Organization

## Environmental Education

The JAE Group conducts in-house environmental education for new employees and newly promoted supervisors, team leaders, and managers. The goal of environmental education is to raise awareness regarding global environmental conservation and the need for compliance with environmental regulations. In addition, employees involved in operations that have a high environmental impact receive specialized education. This education is aimed at reducing environmental risks by focusing on accident prevention and emergency response.

JAE Group employees are also actively involved in attending outside workshops and seminars in order to gain public qualifications and improve their environmental knowledge.

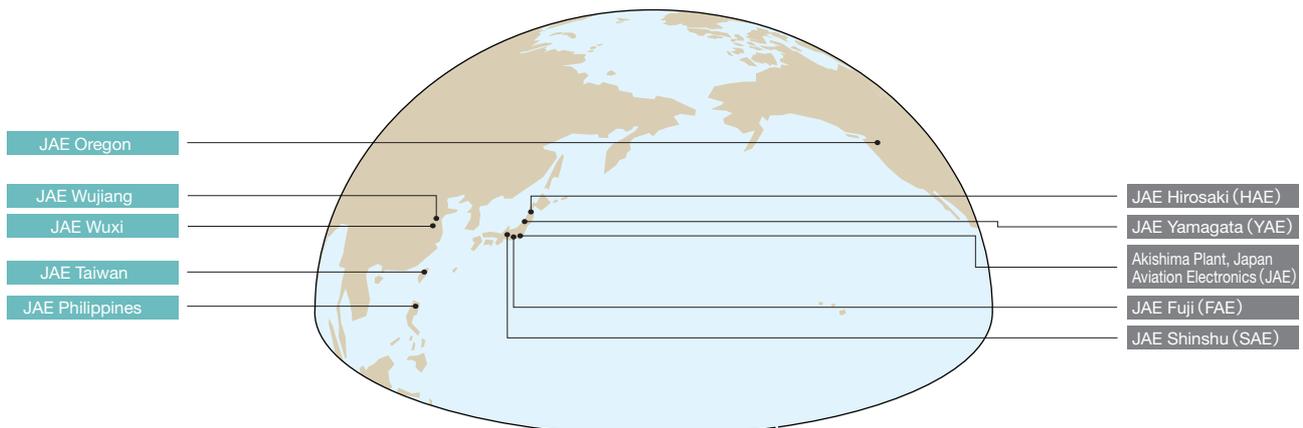


Internal auditor education

## Overseas ISO 14001 Certification

The JAE Group has made a strong effort to acquire ISO 14001 certification for its overseas group companies. As of October 2003, all of the company's overseas plants have acquired ISO 14001 certification.

Site	Certification Date	Certification Body	Certification No.
JAE Taiwan	2001.03.22	Bureau of Standards, Meteorology and Inspection, Taiwanese Ministry of Economic Affairs	5E5E001-01
JAE Philippines	2003.01.30	TÜV Management Service GmbH	12 104 15177 TMS
JAE Wuxi	2002.10.29	DNV Certification B.V., Netherlands	0126-2003-AE-RGC-RvA
JAE Wujiang	2003.10.22	SGS Societe Generale de Surveillance SA	CH03/0920
JAE Oregon	2003.08.20	Underwriters Laboratories Inc. (UL)	A12142



# Environmental Management Systems

## Regulatory Compliance

The issue of regulatory compliance has received much attention in recent years due to incidents involving improprieties by large corporations in Japan and elsewhere. This situation has led to an increased focus on corporate social responsibility (CSR) by the mass media. Corporations are expected to practice ethical and regulatory compliance and consider stakeholders while conducting their business in a fair and honest manner.

The JAE Group has continually emphasized regulatory compliance as a priority area. The company has established an internal system for corporate ethics and constantly emphasizes the need for compliance among its employees.

Changes in environmental regulations are continually monitored and combined with risk prevention measures to ensure that the company does not exceed regulatory standards and is able to meet other regulatory requirements. The company establishes voluntary standards based on the following government air and water emission standards: Air Pollution Control Law, Water Pollution Control Law, National Effluent Standards, and municipal ordinances.

NEC Corporation also conducts compliance audits of JAE operations. Most recently, NEC conducted an audit of the JAE Akishima Plant to assess the level of regulatory compliance with environmental and safety and health management regulations. No areas were identified as requiring urgent improvement, but some deficiencies in filing necessary paperwork were noted. Since the audit, the JAE Akishima Plant has addressed these deficiencies by working with the relevant authorities to file the necessary paperwork.



Compliance audit performed by NEC Corporation

### ● Compliance Record in FY 2003

The JAE Group had a perfect record with no environmental fines or litigation during FY 2003.

Two incidents (detailed below) occurred in which regulatory standards were exceeded. In both situations, the company notified the relevant authorities and carried out an investigation and appropriate countermeasures.

Date	Site	Description
October 10, 2003	JAE Akishima Plant	Concentration of hexavalent chromium in wastewater measured at 0.64 mg/l, exceeding Akishima City water standards by 0.5 mg/l. In response, the plant installed equipment for continuous measurement of chromium concentration levels and applied stricter controls for wastewater treatment. Akishima City authorities were notified both at the time of the incident and after the implementation of countermeasures.
November 13, 2003	JAE Akishima Plant	Level of Biological Oxygen Demand (BOD) in wastewater exceeded Akishima City regulatory limit of 300 mg/l. The incident was treated as a critical environmental issue due to its previous occurrence. In response, the plant reassessed its wastewater treatment process and implemented additional training for employees. BOD levels have since been measured at around 200 mg/l.

## Environmental Audits

The JAE Group utilizes the following environmental audits in order to monitor its environmental initiatives.

1. Third party audits: ISO 14001 audits performed by a qualified certification body, including periodic audits and update audits.
2. Internal audits: Audits used to monitor the progress of environmental initiatives by each environmental management working group.

The results of audits performed in FY 2003 are summarized below.

### ● ISO 14001 Inspection for Fiscal 2003

Inspection Site	Strong Points	Other Findings		
		Category A	Category B	Areas for Improvement
Japan Aviation Electronics Industry	0 incidence	0 incidence	1 incidence	19 incidence
JAE Hirosaki	2 incidences	0 incidence	0 incidence	11 incidence
JAE Yamagata	3 incidences	0 incidence	0 incidence	9 incidence
JAE Fuji	1 incidence	0 incidence	0 incidence	10 incidence
JAE Shinshu	1 incidence	0 incidence	0 incidence	6 incidence

### ● Fiscal 2003 Internal Audits

Audit Site	Strong Points	Other Findings		
		Nonconforming Items	Items to be Monitored	Corrective Action Request
Japan Aviation Electronics Industry	20 incidence	1 incidence	35 incidence	32 incidence
JAE Hirosaki	4 incidence	0 incidence	1 incidence	17 incidence
JAE Yamagata	6 incidence	18 incidence	17 incidence	16 incidence
JAE Fuji	1 incidence	3 incidence	15 incidence	4 incidence
JAE Shinshu	10 incidence	0 incidence	7 incidence	16 incidence

Remedial actions have been taken for all audit findings.

In addition, the JAE Akishima Plant participated in a mutual audit performed by the NEC Affiliates Environmental Operations Exchange Committee. Since many of the members of this committee have supplier-customer relationships, the mutual environmental audit is categorized as a second party audit.

### ● FY 2003 Mutual Environmental Audit Results

Findings	Audit of Preliminary Survey Forms	On-site Inspection Results
Positive areas	8 incidence	2 incidence
Areas for improvement	1 incidence	2 incidence
Outstanding issues and requests	5 incidence	3 incidence

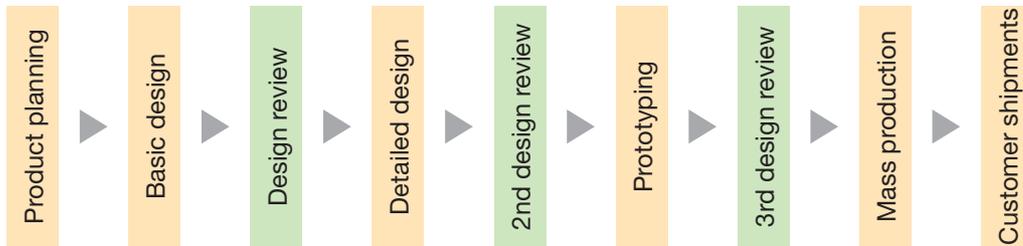
## Environmental Design and Initiatives to Reduce Hazardous Substances

In accordance with its environmental policies, the JAE Group places an emphasis on engaging in activities and developing products that take the environment into full account during their initial stage of development. In order to maintain environmental quality, the company adds to its environmental guidelines as needed and takes necessary precautions to ensure that toxic substances are completely eliminated from its products.

### ● Product Assessments

Product assessments are carried out during the design review phases of the product development process. The product assessments are designed to minimize the environmental impact by designing products from the standpoint of energy

conservation, recyclability and user safety. All phases of the product life cycle are assessed, starting from the production and marketing phases, and continuing through to the product use and product disposal phases.



### ● Elimination of Lead and Other Hazardous Substances

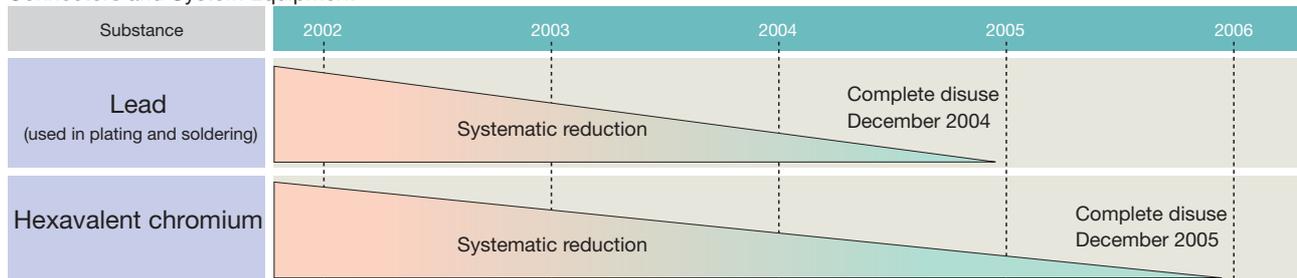
Since FY 2001, all new connectors developed by the JAE Group have been lead-free. In order to completely phase out lead by the end of FY 2004, the JAE Group is converting all of its existing products (except for FPC and FFC fine pitch connectors) to lead-free specifications in response to customer requirements. The JAE Group has also taken an industry-leading role in addressing whisker

problems faced by the connector industry.

The graph below shows the JAE Group's roadmap for eliminating the use of chemical substances designated by the EU's RoHS Directive.\* The company is taking positive steps to reduce its environmental impact by placing a priority on meeting the requirements of its customers and closely monitoring advancements in technology.

### Roadmap for Elimination of Hazardous Substances Designated by RoHS Directive

Connectors and System Equipment



Mercury, PBBs, PBDEs: Not used in accordance with ban on usage    Cadmium: Banned except for designated imported plating products

\* RoHS Directive: restriction on the use of certain hazardous substances in electrical and electronic equipment

# Supply Chain Management and Green Procurement

In an effort to establish environmental quality, the JAE Group participates in customer-led environmental quality audits and conducts briefings on its environmental initiatives for the benefit of its customers. In order to promote green procurement, the company has established in-house green procurement guidelines and conducts assessments of the environmental management systems of its suppliers. Other efforts in this area include the development of a green procurement database and an environmental advisor program.

## Responding to Customer Requirements

### ● Environmental Quality Audit (Green Partner Certification)

For the second consecutive year, the JAE Group passed the Green Partner audit performed by Sony Corporation. The audit was performed at one of the overseas companies that receives subcontracting work from the JAE Group. The JAE Group has achieved Green Partner certification for 10 of its sites.

In addition, the JAE Group successfully passed environmental quality audits by Pioneer Plasma Display Corporation and Fuji Xerox Co., Ltd.

### ● Customer Briefings

In February and March 2004, the JAE Group conducted environmental education sessions at each of its domestic branch offices and sales offices.

These sessions were combined with visits to leading customers of regional offices. The visits were designed to brief customers on the JAE Group's environmental initiatives, focusing on the company's efforts to develop lead-free products.



Green Partner certification by Sony Corporation

## Green Procurement Database

The JAE Group's green procurement database was brought fully on line in December 2003.

This system was developed in order to serve two purposes. Firstly, the database enables the JAE Group to respond more quickly to survey requests from customers. Secondly, it enables the company to better manage the material composition and chemical substances used in

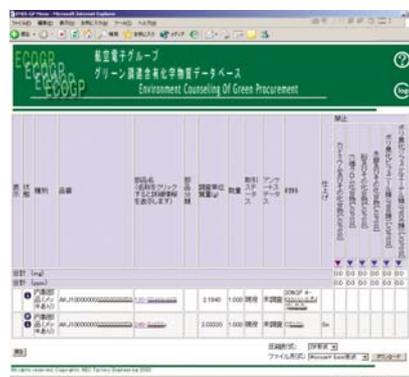
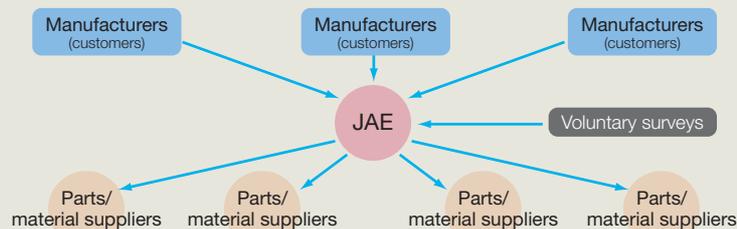
market-supplied products, as part of the JAE Group's environmental mandate for corporate social responsibility. The system was initially deployed at the JAE Akishima Plant and later deployed at the JAE Hiroasaki, JAE Yamagata, and JAE Shinshu plants starting from February 2004. The system will be expanded with bilingual support for overseas deployment in FY 2004.

### Green Procurement Database

**Objective:** Enable centralized management of surveys concerning chemical substance content and composition data for JAE Group products.

- Respond to survey requests more efficiently (automatically generate questionnaires)
- Better utilize past survey data (centralized management of composition data)
- Conduct environmental impact assessments for products (generate totals based on BM)
- Share data between plants (overseas deployment scheduled for latter half of FY 2004)

**Social responsibility: Management of environmental impact substances in products**



Green procurement database containing chemical substance data

## Green Procurement

### ● Revised Green Procurement Guidelines

The JAE Group officially revised its green procurement guidelines in December 2003. The revised guidelines take into account restrictions and planned phase-outs of chemical substances by customers, and reflect recommendations by the Japan Green Procurement Survey Standardization Institute of the Japan Electronics and Information Technology Industries Association (JEITA).

### ● Assessing Environmental Management Systems at Suppliers

During the period from October 2003 to February 2004, the JAE Group conducted visits to the plants of major suppliers in order to assess their environmental management systems. Suppliers were chosen based on their level of environmental impact and use of chemical substances.

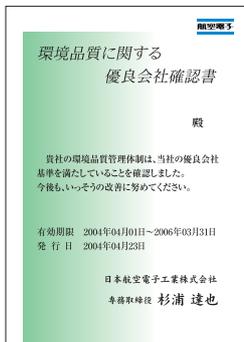
Over 40 suppliers of the JAE Akishima Plant were assessed during this period. All suppliers were judged to have passed the company's environmental management requirements. These suppliers were later presented with a formal certificate of recognition for outstanding environmental quality in February 2004.

The JAE Group will continue to conduct these assessments during FY 2004 and beyond, with the goal of evaluating each and every supplier of the JAE Group.

### ● Environmental Advisor Program

The environmental advisor program was established in February 2004. The program is designed to train qualified individuals who will visit suppliers in order to assess their environmental management systems and provide necessary support and guidance.

The first group of 38 environmental advisors received their certification in May 2004, followed by a second group of 11 individuals in June 2004. A third group of 10 individuals received their certification in July 2004, bringing the total to 59 advisors. These advisors have been working in the field since June 2004.



Official Recognition of Outstanding Environmental Quality



Conducting a supplier assessment



Environmental advisor training

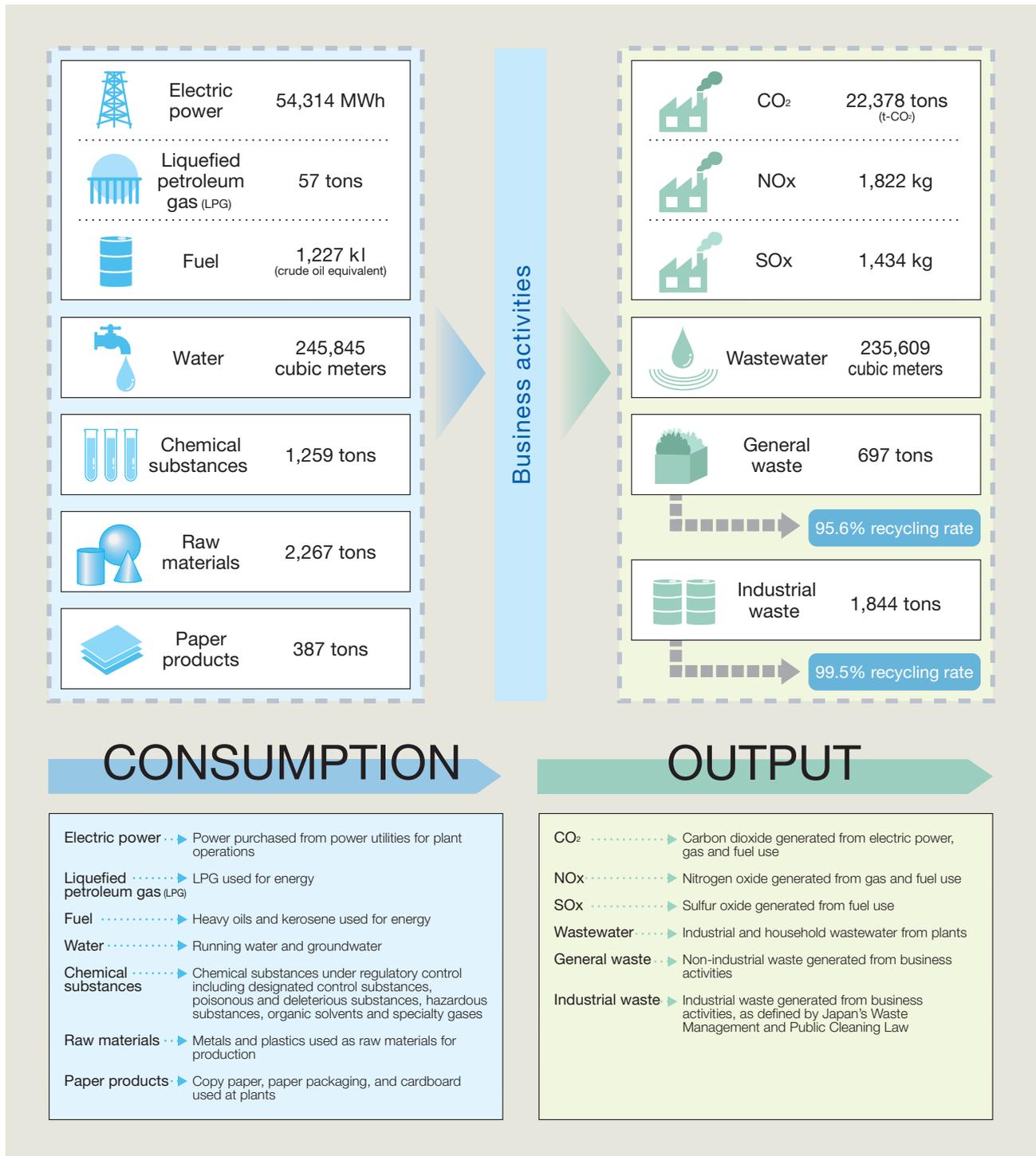


Graduation ceremony for environmental advisor program

# Environmental Impact

The data below summarizes the resources consumed by the JAE Group's Akishima Plant and its four domestic manufacturing subsidiaries, and their environmental impact.

## Consumption and Environmental Impact



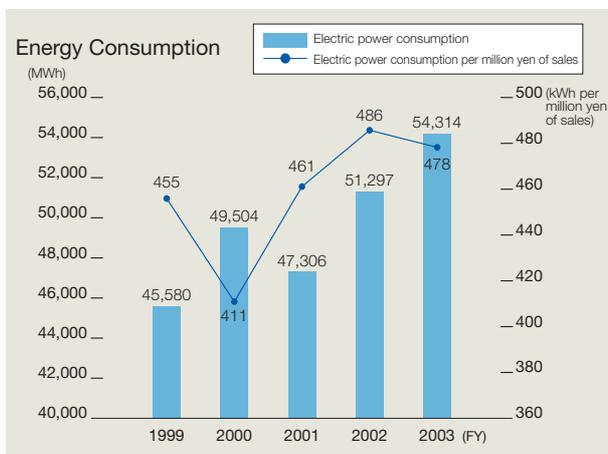
# Resource and Energy Conservation

The warming effect caused by increased greenhouse gas emissions has been blamed for changing global weather patterns and other changes having a significant impact on the earth's ecosystem and human society. JAE Group companies are striving to reduce their electric power consumption and improve their production efficiency in order to reduce carbon dioxide emissions. In addition, the company has embarked on a business process reengineering (BPR) effort to conserve paper resources and improve the efficiency of its business.

## Energy Conservation

### ● Electric Power

Electric power consumption by the JAE Group increased by 5.9% year-on-year, totaling 53,314 MWh in FY 2003. The increase was mostly triggered by a rise in production volumes. On a sales volume basis, electric power consumption per million yen of sales improved, coming in slightly lower than the previous year.



The total electric power consumption of the JAE Akishima Plant and JAE Shinshu has decreased since FY 2002. Notably, the JAE Akishima Plant achieved a significant reduction of 4.6% year-on-year. The improvement was a result of energy conservation measures achieved through the installation of electric power monitoring equipment during FY 2003, and the plant's migration to a shared service solution from an energy service company (ESCO).

### ● Plants Designated under the Energy Conservation Law\*

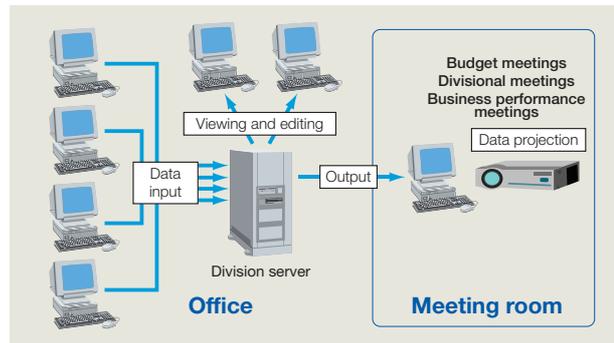
Classification	Site
Type 1 Designated Energy Management Factory (total annual consumption exceeding 12,000,000 kWh)	JAE Akishima Plant JAE Hiroasaki
Type 1 Designated Energy Management Factory (total annual consumption exceeding 6,000,000 kWh)	JAE Yamagata

\*Energy Conservation Law: Officially name is the Law Concerning the Rational Use of Energy

## Business Process Reengineering (BPR)

The JAE Group is striving to reduce its paper consumption in order to produce less industrial waste and conserve resources. Accompanying this effort, the company has embarked on a business process reengineering (BPR) effort to improve its business efficiency by sharing data and improving the efficiency of tasks that involve the use of paper. Specifically, the JAE Group is working to create a system that enables tasks to be performed using only electronic data. This initiative involves adopting digital copiers to convert paper data to electronic formats and appropriate training for deployment across the organization. Paperless meetings are also conducted without relying on the use of paper.

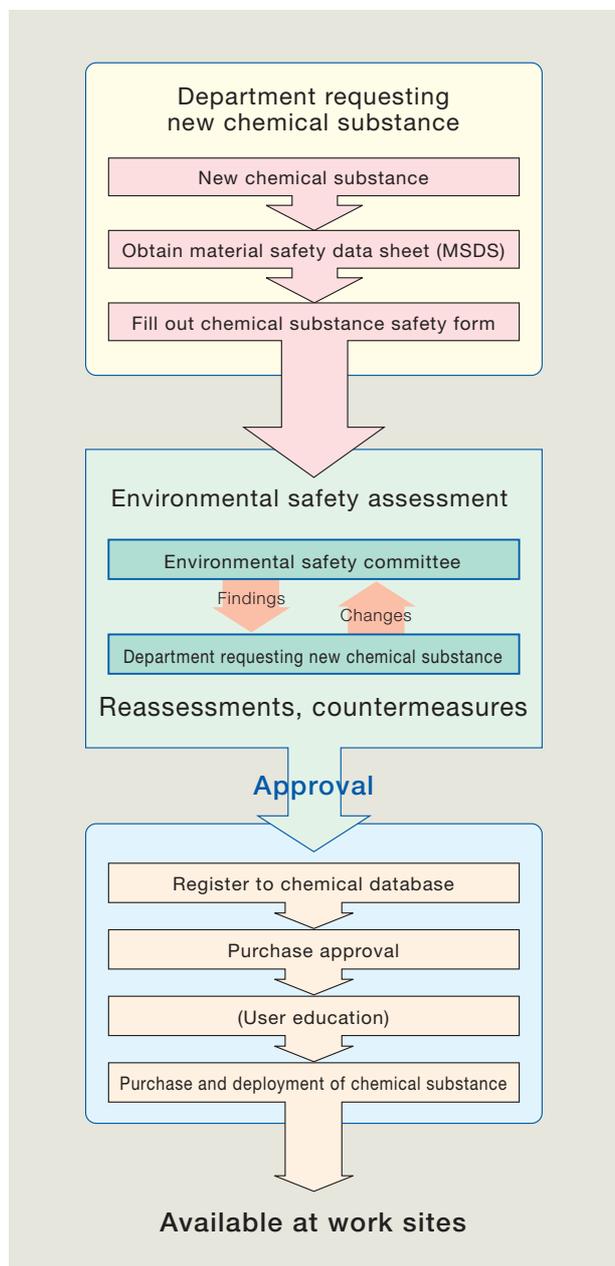
Initially, the JAE Group set a goal of reducing its paper consumption by at least 30% through March 2005, compared with FY 2001 levels. However, the JAE Group had already achieved a 32.1% reduction by FY 2003, easily surpassing its medium-range target well ahead of schedule.



Within each division, the company appoints individuals who are responsible for strictly managing the use of chemical substances. Notification rules ensure that relevant on-site divisions are notified in the event of an emergency.

## Flowchart for Chemical Substance Management

The flowchart below describes the assessment process conducted prior to the adoption of a new chemical substance. The JAE Group uses its own chemical substance safety forms, which must be filled out with Material Safety Data Sheet (MSDS) data and other information prescribed by company regulations. New chemical substances must undergo an environmental safety audit prior to deployment. Chemical substance safety forms and MSDS data are made available at work sites to ensure that employees follow correct procedures for handling and disposal of chemical substances.



## Pollutant Release and Transfer Register (PRTR) Data

The minimum volume requiring reporting of PRTR data has been lowered to one ton starting from FY 2003. As a result of this change, the number of PRTR-designated substances used by the JAE Group has increased to five substances from two substances in FY 2002. Two of the JAE Group's five domestic plants were required to report PRTR data, as shown in the table below.

Total use of PRTR-designated substances increased due to a rise in production volumes. However, the use of antimony and its compounds decreased due to changes in the percentage of molding materials used by the company, as a result of measures to phase out lead. Future efforts will include reducing the use of hexavalent chromium in order to develop hexavalent chromium-free products.

### Volume of PRTR-Designated Substances

(Total of JAE Akishima Plant and JAE Hiroasaki)

(Unit: Tons)

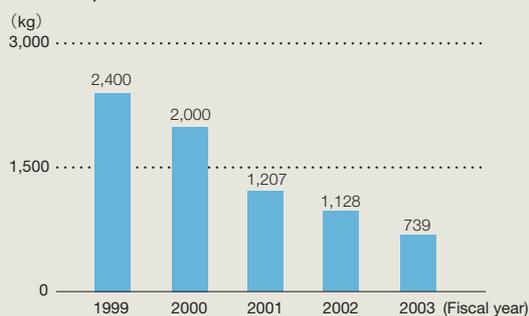
PRTR-Designated Substance	FY 2003	FY 2002	Change
Antimony and its compounds	5.6	7.7	-2.1
Hexavalent chromium compounds*	0.77	0.50	0.27
Nickel	6.7	6.0	0.7
Nickel compounds*	2.2	2.1	1.0
Hydrogen fluoride and its water-soluble salts	2.3	2.3	0

\*Special Class 1 Designated Chemical Substance (Minimum report volume: 0.5 tons)

### Prevention of Ozone Depletion

In 1993, the JAE Group eliminated its use of trichloroethylene and CFCs after these substances were banned from production following the ratification of the Montreal Accord. Currently, the JAE Group is working to install equipment in order to eliminate the use of hydrofluorocarbons (HFCs), which are approved for use as an alternative to CFCs but have been indicated as contributing to ozone layer depletion. The use of HFCs is being replaced with cleaning agents that cause less environmental impact.

#### HFC Consumption at JAE Akishima Plant



The JAE Group has adopted a customer-oriented approach to logistics that improves the flow of products, reduces lead times, and improves quality. This approach also leads to significant environmental benefits by reducing fuel consumption during transport and promoting reduced consumption and increased recycling of packaging materials.

## Reduction and Recycling of Packaging Materials

Since 2001, the JAE Group has reformed its distribution practices as part of a “Fresh Factory, Fresh Logistics” approach that is designed to reduce logistics costs. This initiative involves simplifying on-site logistics processes, better utilizing existing warehouse space, and eliminating rental warehouses in favor of outsourced supply chain management (SCM) solutions. The JAE Group has also sought to reduce its consumption of packaging materials as part of this initiative. The company has successfully reduced its consumption of petroleum-based styrofoam and foam products by switching to packaging methods that eliminate the need for cushioning materials, and has reduced its output of waste plastic.

Previously, the JAE Group used cardboard boxes to transport molding parts within the company. These boxes have now been replaced with foldable containers. This solution eliminates the need to receive and collect cardboard boxes, while helping to prevent against overproduction. Local suppliers have also been encouraged to switch to foldable containers for shipments of large numbers of parts.

These initiatives cover just a small portion of the packaging materials used by the JAE Group. In the third stage of the company’s distribution reforms, the JAE Group is expanding its foldable container program to further reduce cardboard consumption. The company is also working to recycle plastic trays and stick packing trays. Currently, the JAE Group recycles 3,000 plastic trays daily. Previously, the company practiced thermal recycling of spent trays, but has now switched to 100% reuse of plastic trays.

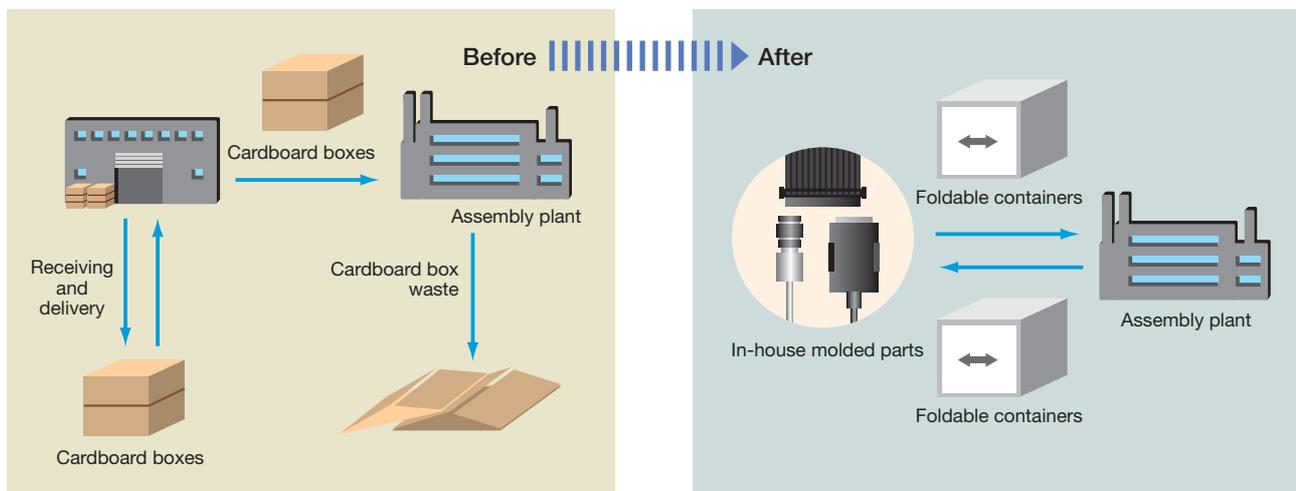


Foldable containers used to transport molding parts within the company



Plastic trays and stick packing trays are inspected and sorted for reuse

### Foldable Container Program



# Reducing Industrial Waste

Environmental Performance

The JAE Group is reducing its industrial waste through zero emissions initiatives aimed at recycling, reuse, and reduction of waste.

## ● Zero Emissions Initiatives

The JAE Group achieved its target of 99% recycling of industrial waste in FY 2003, with the notable exception of failing to recycle maintenance wastewater from plating tanks at the JAE Akishima Plant. However, the plant has already addressed this situation by introducing equipment for recycling maintenance wastewater. These and other initiatives will enable the JAE Group to continue achieving its target of zero emissions of industrial waste.

### JAE Group Zero Emissions Performance

Total waste production*	8,325 tons
Total recycling volume	8,259 tons
Recycling rate	99.2%

\*Includes sales of metal scraps.

Further efforts to reduce industrial waste will be based on maintaining the company's zero emissions record.

For example, the JAE Group will expand its use of foldable containers and increase its recycling of containers used in production and distribution activities. Furthermore, the company is working to reduce plastic molding scraps through design improvements and is adopting composting

practices at its plants.

The JAE Group is also improving the quality of its existing initiatives, such as switching from thermal recycling to material recycling of plastics. Other activities include continued efforts to reduce processing costs by both reducing the volume of precious metals and selling precious metals derived from processing.

## ● Initiatives by the JAE Akishima Plant

As part of its zero emissions initiative, the JAE Akishima Plant separates its waste into 11 major categories and 54 sub-categories of waste. The sorted waste is stored in 20 locations depending on the waste category. The corporate Intranet is used to publish information about sorting practices and waste storage areas in order to better educate employees.

The JAE Akishima Plant leases equipment to suppliers located throughout Japan. These suppliers work directly with local waste processing firms to process end-of-life leased equipment. This system ensures that equipment is processed in accordance with the Waste Disposal and Cleansing Law, while keeping costs down.

# Communication with the Local Community and Contribution to Society

Environmental Communication

In accordance with its Charter of Corporate Conduct the JAE Group is actively involved in communication with the local community and contribution to society. In so doing, the company seeks to attain a balance between its business activities and environmental initiatives as a good corporate citizen.

## Social Initiatives

### ● Environmental Festival in Akishima City (JAE Akishima Plant)

During FY 2003, the JAE Akishima Plant participated in an environmental festival sponsored by the Akishima City government. The event was held to celebrate the city's recent acquisition of ISO 14001 certification. Nobuo Uchida, Executive Expert, Production Support and Environmental Planning Division, was invited to sit on a panel discussion on the topic of partnerships for environmental conservation. As a representative of the Akishima-based JAE Group, Mr. Uchida contributed to a discussion focusing on the role of city governments as mediators between citizens and the private sector. The panel also included individuals active outside the Akishima region.



Nobuo Uchida (center, seated), Executive Expert, Production Support and Environmental Planning Division

### ● Japan Water Prizes (JAE Shinshu)

JAE Shinshu is a member of the Nagano Techno Foundation's Ina Techno-Valley Area Center. Recently the Center received a Certificate for Meritorious Encouragement as part of the Japan Water Prizes. The award recognizes the Center's extensive efforts to monitor water quality and beautify the Tenryu River system. The award also recognizes JAE Shinshu's contributions to events such as the Tenryu River System Environmental Picnic and the Tenryu River System Health Check survey, in which volunteers monitor water quality levels during a 24-hour period.

\*The Japan Water Prizes were created to recognize outstanding efforts to regenerate healthy water cycle systems, with the goal of ensuring an ample supply of safe, clear, and clean-tasting water for the 21st century in every part of the world. The awards are sponsored by the Japan Water Prizes Committee.



## Summary of FY 2003 Environmental Initiatives

Environmental initiatives for FY 2003 were chosen by first examining the environmental impact of the JAE Group's business activities during the previous fiscal year. Items with a strong environmental impact were selected for improvement. Goals and targets were then established as the basis for implementing environmental initiatives.

For FY 2003, the JAE Group's environmental initiatives were centered on the themes of energy conservation, zero emissions, resource conservation and converting existing products to lead-free and chromium-free specifications. Specific goals and targets were established for each domestic plant and manufacturing subsidiary. The majority of these goals and targets were met, with the exception of those that were not met due to increases in production.

### Major Targets for Environmental Initiatives

site	No. of Targets	Targets Achievement
JAE Akishima Plant	8	7 targets achieved; 1 target nearly achieved
JAE Hirosaki	6	All targets achieved
JAE Yamagata	3	1 target achieved; 2 targets nearly achieved
JAE Fuji	6	All targets achieved
JAE Shinshu	4	3 targets achieved; 1 target not achieved

## Environmental Accounting

The JAE Group has adopted environmental accounting practices in order to improve its analysis of the relationship between the costs of environmental initiatives and their benefits. The table below summarizes the investments and costs for environmental initiatives and the gains on sales of reusable materials during FY 2002.

Category	Description	Amount (Unit: Thousand yen)
FY 2003 investments	Investments for equipment used for lead-free and chromium-free initiatives, equipment for plating wastewater treatment, etc.	64,780
FY 2003 R&D costs	R&D labor cost incurred for lead-free and chromium-free initiatives, etc.	35,200
FY 2003 gains on sales of reusable materials, etc.	Sales of scrap metal	150,370

### ● FY 2003 Environmental Accounting Standards

**Scope:** Domestic manufacturing facilities of the JAE Group, consisting of the JAE Akishima Plant and four domestic manufacturing subsidiaries. Data for the JAE Akishima Plant includes the two subsidiaries located on its premises, JAE Services, Ltd. and JAE Engineering, Ltd.

**Period:** April 1, 2003 - March 31, 2004

**Unit :** Thousand yen (rounded to the nearest thousand yen)



## Inquiry

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