



Protecting the Earth

- For Future Generations -

Yokogawa Group Environmental Report 2003

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This is the fifth issue of our annual environmental report. This issue takes into account the recent social trends and concerns of readers, while maintaining consistency with previous issues.

- **Clarifying the objectives of issuing this environmental report:** Conveys an overview of environmental management by the Yokogawa Group, informs our readers of the Group's activities during the past year in building a sustainable society, and strengthens collaboration with our many stakeholders.
- **Making the report easier to understand:** Technical terms for the industry and Yokogawa jargon are generally avoided; when it is absolutely necessary to use such terms, they are explained in footnotes. In addition, at the head of each section there is now a summary of the main points.
- **Ensured transparency:** Yokogawa Electric Corporation teamed up with a company specializing in the preparation of reports, and jointly collected materials and wrote the articles for this report. While gathering materials, we checked numerical values and other information with original data and hosted factory tours and other site visits.
- **Referencing the guidelines and survey/research reports:** The following guidelines and reports were used as reference materials in preparing this issue to take account of social trends and incorporate the results of survey/research reports: Environmental Reporting Guidelines (Fiscal Year 2000 Version) published by the Ministry of the Environment, Japan; Environmental Accounting Guidelines (2002) published by the Ministry of the Environment, Japan; Environmental Performance Indicators for Businesses (Fiscal Year 2002 Version) published by the Ministry of the Environment, Japan; Sustainability Reporting Guidelines 2002 published by Global Reporting Initiative™, the United States; A Survey of Environmental Reports published by NTT-X, Inc., Japan; and Desirable Sustainability Reporting (from the viewpoint of CSR) published by Network for Environmental Reporting, Japan.
- **Period reported:** April 1, 2002 through March 31, 2003
- **Date issued:** July 2003
- **Next issue:** July 2004
- **Data sources:** Total data for the following sites, which account for approximately 70 percent of the Group's environmental burden.

Company or Site	Employees	Functions
Headquarters, Yokogawa Electric Corp., Japan	5,499	Headquarter function, research and development, engineering, manufacturing, sales, and servicing
Kofu plant, Yokogawa Electric Corp., Japan	1,001	Engineering and manufacturing
Komine factory, Yokogawa Electronics Manufacturing Corp., Japan	409	Engineering, manufacturing, and sales
*Ome factory, Yokogawa Electronics Manufacturing Corp., Japan	234	Manufacturing
Matsukawa and Komagane factories, Yokogawa Electronics Manufacturing Corp., Japan	293	Manufacturing
Mie factory, Yokogawa Electronics Manufacturing Corp., Japan	129	Manufacturing
Koriyama and Haramachi factories, Yokogawa Electronics Manufacturing Corp., Japan	359	Manufacturing
*Ando Electric Co., Ltd., Japan	850	Engineering, manufacturing, and sales
Kokusai Chart Corp., Japan	158	Engineering, manufacturing, and sales
Yokogawa M&C Corp., Japan	168	Engineering, manufacturing, and sales
Yokogawa Trading Corp., Japan	142	Procurement and import/export agency services
Yokogawa Engineering Service Corp., Japan	837	Repair, calibration, and servicing
Yokogawa Denshikiki Co., Ltd., Japan	355	Engineering, manufacturing, and sales
Suzhou Yokogawa Meter Co., People's Republic of China	438	Manufacturing and sales
Yokogawa Shanghai Instrumentation Co., Ltd., People's Republic of China	118	Manufacturing and sales
Yokogawa Sichuan Instrument Co., Ltd., People's Republic of China	245	Manufacturing and sales
Yokogawa Electric Asia Pte. Ltd., Singapore	271	Engineering and manufacturing
P.T. Yokogawa Manufacturing Batam, Indonesia	221	Manufacturing
Yokogawa Engineering Asia Pte. Ltd., Singapore	327	Engineering and sales

* Sites added since last year's report.

A Message from the President: Handing Over Our Precious Global Environment to Future Generations

– Building a Sustainable Society –

In response to the growing seriousness of our planet's environmental problems, we have embraced the philosophy of sustainability, a universal idea that relates to all mankind. To set this philosophy into action, governments, private enterprises and consumers have begun collaborating to build a sustainable society. Private enterprises, which constitute important members of our society, need to be more aware of their mission and fulfill their social responsibilities.

The Yokogawa Group has implemented environmental management in accordance with our corporate policy, which states "As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information. Individually, we aim to combine good citizenship with the courage to innovate." In accordance with this policy, we have sought each year to expand the scope of our environmentally friendly product design rules. In fiscal year 2002, we enacted our Guidelines for Designing Energy-conservation Products to minimize energy consumption by our customers. We intend to bring to market environmentally friendly products based on these design rules. Among the many environmental solutions that we have developed thus far, our Econo-Pilot energy saving system has won an award from the Director-General of the Energy Conservation Center for its ability to cut power consumption by 60% to 90%.

We firmly believe that the Group can help build a sustainable society by developing such products, reducing the environmental burdens caused by our business operations, collaborating with our customers and the communities in which we live, and focusing on the prosperity of our employees. To ensure the accomplishment of these objectives, it is also essential that we take steps to ensure that each of the companies within the Yokogawa Group is maintaining a healthy and profitable operation. This is especially important in view of scandals in Japan and other countries that have damaged the credibility of large corporations in recent years. Specific measures that are being undertaken include a strengthening of legal compliance by revising the standards of business conduct for the Yokogawa Group and expanding training and other programs to ensure that this code is followed.

Environmental management aims to carry out the activities outlined above while ensuring transparency and being fully accountable. The Yokogawa Group Environment Report 2003 represents our effort to be both transparent and accountable by giving an overview of our environmental management activities in fiscal year 2002. We hope that this 2003 edition will facilitate a two-way communication with our readers and we welcome your comments on this report.

President and Chief Executive Officer

Isao Uchida

内田 勲



Environmental Management of the Yokogawa Group

Overview of Environmental Management in Line with Corporate Strategy

Summary : The Yokogawa Group has implemented environmental management in accordance with its new VISION-21 & ACTION-21 corporate strategy, aiming to achieve a healthy and profitable operation. The environmental management of the Group is striving to build a sustainable society by focusing on the following three principal aspects: (1) promotion of recycling-based management, (2) global environmental protection, and (3) independent initiatives. The Group is committed to fulfilling its social responsibility by establishing environmental management systems that address its business activities as well as its relationships with employees, society and the global environment.

Based on Yokogawa Electric Corporation's corporate philosophy, the Group has implemented environmental management under its new VISION-21 & ACTION-21 corporate strategy, with the aim of achieving a healthy and profitable operation. VISION-21 defines the direction that the Group will take, while ACTION-21 sets out the strategy for achieving this.

Corporate Philosophy:

As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information.

Individually, we aim to combine good citizenship with the courage to innovate.

VISION-21 & ACTION-21 states that the Yokogawa Group will work together with its customers to create value in the fields of industrial and social systems. Thus, the Group aims to contribute toward not only preserving the global environment in the 21st century and realizing resource recycling in society, but also realizing a thriving global society.

The Group recognizes the importance of its social responsibility with respect to the deterioration of the global environment, diversification of social values, and evolution of markets*¹, and is striving to build a sustainable society.

*¹ Evolution of markets means that companies will come to be evaluated by not only economic aspects but also social and human aspects.

The term "environmental management" refers to the establishment by the Yokogawa Group of an environmental management system that is based on the following three key aspects, in accordance with the new VISION-21 & ACTION-21 corporate strategy:

(1) Promotion of recycling-based management

Effective use of resources and energy; prevention of environmental pollution; and promotion of the reduction, reuse, and recycling of waste

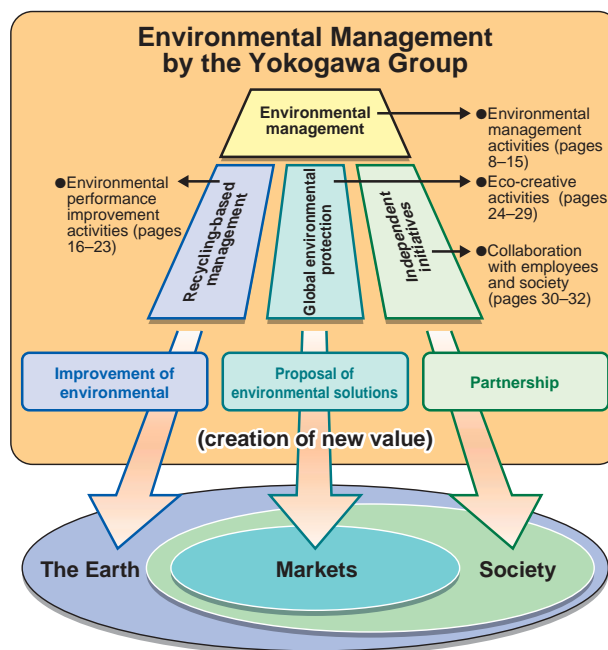
(2) Global environmental protection

Creation of green products and supply of environmental solution services

(3) Independent initiatives

Carrying out environmental protection activities and participating in corporate and civil activities to protect the environment

As shown in the figure below, the Group is creating new value by improving its environmental performance (the Earth), developing environmental solutions (markets) and building collaborative relationships with diverse stakeholders (society).



Basic Environmental Management Rules

Summary : In line with our new corporate strategy, we enacted the Basic Environmental Management Rules for the Yokogawa Group in April 2001. These rules apply to the operations of all firms of the global Yokogawa Group and make the following explicit statement on our basic philosophy: "The Yokogawa Group recognizes that protecting the earth's environment for future generations is crucially important for all mankind. We therefore aim to contribute to industrial development while maintaining harmony with the environment." These rules contain articles on "Environmental Policy," "Code of Conduct for Environmental Protection," "Environmental Management Organization," and "Implementation of Environmental Protection Activities" that prescribe how this basic philosophy is to be put into practice.

1. Basic Environmental Management Rules

In line with our new corporate strategy, we have enacted Basic Environmental Management Rules for the Yokogawa Group.

These rules set out our environmental management policy on the operations of all firms within the global Yokogawa Group.

Basic Environmental Management Rules for the Yokogawa Group

Article 1. Environmental Philosophy of the Yokogawa Group

This is based on Yokogawa's corporate policy, which states: "As a company, our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information. Individually, we aim to combine good citizenship with the courage to innovate." The Yokogawa Group recognizes that protecting the earth's environment for future generations is crucially important for all mankind. We therefore aim to maintain harmony with the environment while contributing to industrial development.

Article 2. Environmental Policy of the Yokogawa Group

The Yokogawa Group considers protection of the global environment to be a key management target and has an environmental management system to continuously improve the Group's environmental performance. In accordance with this policy, all firms in the Group will:

(1) Strive to carry out resource recycling-based operations.

By conducting its business without omission, the Yokogawa Group will strive to utilize energy and resources efficiently, to prevent environmental pollution, to reduce waste, and to promote reuse and recycling of resources with the aim of achieving zero emissions.

(2) Contribute to global environmental protection.

The Yokogawa Group will create "green" environmentally friendly products and supply society with solutions and services that contribute to global environmental protection.

(3) Pursue independent initiatives to protect the environment.

All employees of the Yokogawa Group will:

- Understand the Environmental Philosophy (Article 1), Code of Conduct for Environmental Protection (Article 3), and Environmental Policy (this article) of the Yokogawa Group;

- Improve their environmental awareness and implement environmental protection activities under their own initiative; and

- Positively support and participate in corporate and civil activities to protect the environment.

Article 3. Code of Conduct for Environmental Protection by the Yokogawa Group

The Yokogawa Group will consider the need to protect the global environment in all aspects of its business activities. Therefore, all firms in the Group will:

(1) Minimize the environmental impact of their activities and promote recycling in their business operations.

(2) Actively assist customers with their global environment protection activities.

(3) Actively participate in and cooperate with global environment protection activities wherever they are conducted.

Article 4. Environmental Management Organization

(1) Yokogawa Electric Corporation's Vice President of Environmental Management reports directly to the President and Chief Executive Officer of Yokogawa Electric Corporation, and oversees and administers the environmental protection activities of all firms within the Group.

(2) Yokogawa Electric Corporation's department responsible for management and support for the Group instructs the Group firms to carry out the basic rules stipulated herein.

(3) The President of each firm within the Group is responsible for the implementation of environmental protection activities.

5. Implementation of Environmental Protection Activities

(1) All firms of the Yokogawa Group will abide by Article 2 of the Environmental Policy and implement concrete environmental protection activities.

(2) Departments that function as a headquarters will improve the instruction and support that they provide to individual divisions and Group firms in order to promote environmental protection activities.

2. Basic Approach for the Establishment of Environmental Management Systems

The Yokogawa Group aims to establish an environmental management system in each of its firms, according to the scope and scale of business of each firm. We have divided all firms into two categories depending on whether they are to (1) obtain

ISO14001 certification or (2) implement the PDCA cycles for environmental protection in line with the above-mentioned basic rules, as an alternative to obtaining ISO14001 certification.

Environmental Management Indicators

Summary : The Yokogawa Group aims to quantify environmental management wherever possible so that measures can be based on objective data. We have therefore established an "eco point" (EP) indicator to comprehensively assess the reduction of environmental burdens and are using environmental burden efficiency (which is obtained by dividing the gross profit on sales by EP) as one of the environmental management indicators. Using fiscal year 2000 as a base, the Group intends that this value will be 1.5 times larger in fiscal year 2005.

One of the objectives of environmental management is to reduce the burden that business activities impose on the environment and to create new value through collaboration with employees and society. In order to assess the success of these measures, it is important to quantitatively understand the environmental impact (environmental burdens) of business activities and to quantitatively analyze how much economic value has been generated relative to that environmental burden. As basic data, the Yokogawa Group used the eco-balance mentioned later (see page 8) and has developed the aforementioned eco point environmental burden indicator to quantify the environmental impact (environmental burden) of its business activities.

1. Eco Point Method

The eco point (EP) environmental burden indicator is calculated by comprehensively analyzing and quantifying the environmental burden at an entire site. The higher the EP value, the greater the impact on the environment.

The Yokogawa Group first employed EP in fiscal 2000, and in fiscal 2001 improved the EP by taking the impact of toxic substances and other forms of waste pollution into account. The equation below is used to calculate EP. First, an overview of the environmental burden is grasped. Next, a life-cycle assessment (LCA*¹) or some similar method is used to analyze emissions (inventory analysis*²). This determines how much resources have been consumed and how much has been emitted into the earth's atmosphere and hydrosphere (ground water). This is then multiplied by the eco factor*³ to normalize the degree of impact.

$$\text{Eco point (EP)} = \sum(\text{LCA inventory analysis result} \times \text{eco factor})$$

- *1 Life-cycle assessment: LCA is an assessment which comprehensively evaluates the impact of a specific product on the environment throughout its lifecycle, from material purchase, manufacture, and distribution to its use and disposal.
- *2 Inventory analysis: A technique to analyze emissions, in which the supplied power, town gas, water, paper, and chemicals, and emissions (lead solder, volatile organic compounds [VOC], waste materials) are analyzed by LCA or a similar method to calculate the primary energy consumption and the amounts emitted to the earth's atmosphere and hydrosphere (ground water) as individual types of waste such as carbon dioxide, nitrogen oxide, VOC, and heavy metal. Namely, an inventory analysis calculates the emission amounts (inventory) for the individual impact categories (global-warming gases, acidification gases, ozone-depleting potential [ODP] substances, substances toxic to humans, etc.).
- *3 Eco factors: Weighing factors to be applied to the emission amounts in individual categories obtained by an inventory analysis, taking the degree of impact on the environment by emissions in each category into account.

2. Environmental Management Indicator

Since there is no one universally accepted environmental management indicator, different types of indicators have been explored. The Yokogawa Group has established an indicator called "environmental burden efficiency" to combine corporate activities with environmental protection activities.

Environmental burden efficiency is calculated using the following equation as an indicator to measure how efficiently environmental management generates economic value for a specific environmental burden. This recognizes the fact that environmental management generates corporate economic values while reducing overall environmental burdens with respect to corporate activities.

$$\text{Environmental burden efficiency} = \frac{\text{Gross profit on sales}}{\text{EP}}$$

The Yokogawa Group will reduce EP further, increase economic value and promote environmental management, to make the environmental burden efficiency of fiscal 2005 1.5 times larger than that of fiscal 2000.

Standards of Business Conduct for the Yokogawa Group

Summary : In June 2002, we enacted the "Standards of Business Conduct for the Yokogawa Group." This code is intended not just to promote legal compliance but also to nurture a corporate culture in which each employee is encouraged to acquire a high level of corporate ethics and act on his or her own initiative. In order to make the new code of conduct effective, we set up the Corporate Ethics Committee, distributed a small booklet "Standards of Business Conduct for the Yokogawa Group" to all employees, and held lectures on corporate ethics for directors and line managers.

1. Enactment of "Standards of Business Conduct for the Yokogawa Group"

Although the primary objective of a company is to make profits and achieve sustainable growth, scandals may occur if the company ignores social or humanitarian aspects. In January 1994 when corporate ethics started to attract attention, we enacted the "Corporate Code of Conduct for Yokogawa Electric Corporation." In addition, we have served as a board member of the Business Ethics Research Center since its establishment in 1997.

During the process of recognizing and fulfilling its responsibilities as a good corporate citizen, the Yokogawa Group has come to realize that a good balance among the environment, society, and economy is becoming increasingly important. We therefore reviewed the "Corporate Code of Conduct for Yokogawa Electric Corporation" and drew up the new "Standard of Business Conduct for the Yokogawa Group Code" in June 2002 for all Group firms. The new code defines the following policies: (1) achievement of corporate philosophies, (2) customer satisfaction, (3) compliance with laws, regulations, and rules, (4) respect for human rights, and (5) order and safety in civil society. It also defines the following relationships: (1) relationship with customers, (2) relationship with stockholders, (3) relationship with communities and society, (4) relationship with suppliers, (5) relationship with competing companies, and (6) relationship with politics and governments. It referred to global environmental protection in (3) relationship with communities and society. Based on these policies and relationships, this "Corporate Code of Conduct" offers guidelines for conduct. These guidelines do not contain "must not" expressions. Rather, they encourage employees to act proactively to establish corporate ethics. At our offices in countries outside Japan, the code of conduct applies in view of local laws, customs, religions, and other aspects.

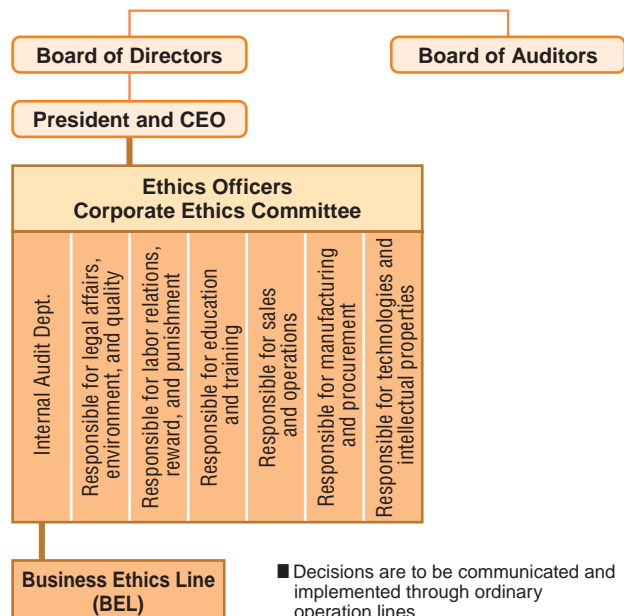


Standards of Business Conduct for the Yokogawa Group

2. Establishing a System to Promote Corporate Ethics

In order to make the new code of conduct effective, we must promote the code and provide training so that the code will not be mere words. In November 2001, we established the Business Ethics Line (BEL) to quickly identify violations of the corporate code of conduct, related rules, and laws, and to protect the company's image. To govern the new code of conduct, we set up the "Corporate Ethics Committee" administered by the Internal Audit Department. Primary responsibilities of this committee are to strengthen corporate ethics, draw up measures concerning corporate ethics and legal compliance, investigate the causes of problems concerning corporate ethics, implement corrective actions, and report to the Board of Directors.

As a part of enlightenment activities, we distributed a small booklet "Standards of Business Conduct for the Yokogawa Group" to all employees of the Group companies when we enacted the new code. We have also incorporated a program of corporate ethics into the training given to new employees and to employees when they are promoted to managerial positions. Moreover, we invite external lecturers once a year to keep directors and line managers up to date on corporate ethics. In fiscal 2002, we invited Mr. Muneo Hazama, a director of the Japan Society for Business Ethics Study to us a lecture on the importance of corporate ethics.



System to Promote Corporate Ethics