

Corporate Social Responsibility 2012 CSR Report

The Yokogawa Group aims to benefit society by providing solutions that protect the environment and being a positive influence for social change. On this page you can read about some of our CSR activities over the past year.



Special Features 01

▶ Creating Value for Society and Our Customers

In plants of all kinds, large numbers of Yokogawa products operate around the clock, contributing to economic growth, enabling the efficient use of energy and resources, and improving both productivity and product quality.

Read on to learn more about the contributions that the Yokogawa Group is making in these areas.



Special Features 02

▶ Lifecycle Assessment

The Yokogawa Group is actively developing environmentally friendly products based on its Lifecycle Assessment (LCA) standards. In fiscal year 2011, we reviewed our assessment standards and introduced the use of LCA labels providing information on the LCA results.



▶ Environment



Yokogawa believes that protecting the environment is a top-priority management issue. We therefore promote environmental management while providing solutions that will help our customers reduce their energy consumption and protect the environment.

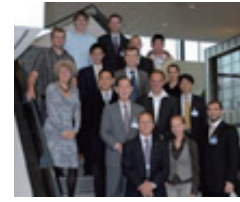
▶ Safety and Health

Recognizing our responsibility for ensuring safety and health, the Yokogawa Group has taken safety and health management to a higher level by constantly carrying out assessments to eliminate or minimize potential risks.



▶ Employees

Employees are a valued Yokogawa resource. We respect human rights and support our diverse workforce by providing career development opportunities and fostering open communication in the workplace.



Yokogawa Corporate Citizenship

▶ Stakeholder Engagement

In every country and region where the Yokogawa Group operates, it is working with its stakeholders to address important social issues.



▶ Community Involvement

Around the world, the Yokogawa Group is working to benefit local communities and address specific needs.



▶ Customer Satisfaction and Quality Assurance

We are engaged in activities that maintain high quality in every aspect of our business — from product sales to maintenance — and take the customer perspective to ensure high satisfaction with our products and services.

▶ Supplier Relations

We have put in place a management system that covers each of our business processes, including purchasing, to ensure that social and environmental concerns are given proper consideration in all our dealings with suppliers.

▶ Corporate Governance and Compliance

We emphasize corporate governance and compliance-oriented management, including preventing corruption, to become a healthier and more open company.

▶ Yokogawa's Approach to CSR

Yokogawa has specific action guidelines and a CSR promotion organization that are based on our corporate philosophy and standards of business conduct.

About the 2012 CSR Report

The 2012 CSR Report gives a complete overview of the CSR activities of the Yokogawa Group. Our Group prepares its CSR Report in three versions--the "Global Version," "Japan Version" and "China Version"--in order to provide useful information for the benefit of all stakeholders.


⇒ **Global Version** (This page)

Provide stakeholders worldwide with information on what the Group is doing globally.
(Language: English)

⇒ **Japan Version**

Provide stakeholders in Japan with information on what the Group is doing globally, as well as significant, local-community activities in Japan. (Language: Japanese)

⇒ **China Version**

Yokogawa China Co., LTD. | Yokogawa Electric China Co., Ltd. (PDF:2.64MB)pdf 

Provide stakeholders in China with information devoted chiefly to the activities of certain group companies in China. (Language: Chinese)

Key information is also provided in our annual report.

⇒ Annual report

•Period covered by this report

April 1, 2011 through March 31, 2012

Where appropriate, information on events occurring outside this period may be included.

•Scope of data

This report covers Yokogawa Electric and its Group companies. When data having a different scope is provided, that is noted.

•Company names

In this report, "Yokogawa" and "Yokogawa Group" refer to the entire organization, "Yokogawa Electric" is only used with reference to Yokogawa Electric Corporation.

•Reference Guidelines

Environmental Reporting Guidelines (Fiscal year 2007 Version), published by the Ministry of the Environment, Japan

Environmental Accounting Guidelines (Fiscal year 2005 Version), published by the Ministry of the Environment, Japan

Sustainability Reporting Guidelines 2006, published by the Global Reporting Initiative

Past CSR and Environmental Reports

⇒ CSR Report Archive

How Yokogawa Can Help to Achieve Sustainability

Mizue Unno, Managing Director So-Tech Consulting Inc.
Shuzo Kaihori, President & CEO Yokogawa Electric Corporation



Ms. Unno has been conducting a review of Yokogawa's CSR activities since 2010 and has discussed with President Kaihori CSR activities which distinguish Yokogawa. Ms. Unno has a particular interest in the relationship between CSR and Yokogawa Group strategies and business that are closely linked with energy and safety issues, namely measurement and control. She also is interested in the long-term viability of communities in emerging markets.

Rebuilding efforts after the earthquake

Unno: Yokogawa Electric reportedly came through the Great East Japan Earthquake without any major damage to its facilities. Has this disaster had an indirect impact on your business?

Kaihori: I would first like to express my heartfelt condolences to the victims of the earthquake that struck Japan's Tohoku region. We fervently hope for an early recovery of the disaster-stricken area, and towards this end will do our utmost to lend the region support.

Regarding the impact of this disaster on the Yokogawa Group, our key factories in Singapore, China, Tokyo, and Yamanashi (Japan) fortunately didn't suffer any direct damage. However, some of our customers in the materials industry and in the power, gas, water supply/treatment, and other infrastructure related sectors were significantly affected. In the aftermath of the earthquake, our most important role is to help these customers rebuild their factories.



Mizue Unno

Managing Director, So-Tech Consulting Inc., providing Japanese firms advice and support in the areas of sustainability and CSR

The energy industry enters a new era

Unno: Yokogawa makes plant control equipment and systems. What specifically are you doing to help your customers who have been affected by the earthquake?

Kaihori: Plant control systems are like the brain and nerves of the human body. So, the first step at the affected plants is to repair the machinery and other components that carry out the equivalent of the body's motor functions, after which we can attend to the control systems and other equipment that function as a facility's brain and nerves. We are doing everything we can to support our customers so that their plants can resume normal operations as soon as possible.

Unno: Yokogawa also has deep ties to the energy industry, but the recent earthquake is changing the way people think about energy. How has this tragedy affected your business?



Kaihori: Previously, people were interested in energy within the context of global warming and resource depletion. Since the earthquake, however, safety has become a new keyword when it comes to energy. Natural energy sources are also drawing attention. Of course, it is difficult to immediately switch all power generation to natural sources, and we believe we are in a transition, or bridging period, in our march toward this goal. The Yokogawa Group must develop secondary battery-related products and other innovations that allow us to harness natural energy sources, and must stay abreast of global developments in this field to play an important role during this bridging period. We believe that the Yokogawa Group's mission is to be a force for global progress that shows respect for our fellow human beings and protects nature.

Unno: I believe you're saying that you must strive for sustainability as you go about your business activities. The Yokogawa Group's measurement and control technologies are of direct relevance to the energy industry, which means your business can come up with energy solutions and contribute in making a more sustainable society. By taking a strategic approach in this, you will be able to enhance your corporate value.

Kaihori: We are working to become a company that basically provides value in three different ways to its customers: improving efficiency, enhancing safety, and protecting the environment. We have many target markets, but let's consider the energy market as an example. In this market, fossil fuels are still being used during the bridging period, alongside natural energy sources. In emerging markets, where energy demand is skyrocketing, fossil fuels are mainly used as these countries aim to quickly acquire wealth. So, the use of fossil fuels is actually increasing. However, their facilities are not optimal in terms of combustion efficiency and power generation efficiency, and are older and face a number of technical issues. If they adopt our control systems, they can improve combustion efficiency and their power generation efficiency will increase. Consequently, less fuel will be required and, of course, costs will drop. For example, an old thermal power plant in Mongolia introduced our control systems. Throughout the project, our engineers worked with the customer to make improvements and energy efficiency improved significantly.

Helping customers improve safety and environmental management

Kaihori: Also, in China and Southeast Asia steel mills and petrochemical plants that consume a lot of energy are using our systems. We diagnosed problems at several of our customers' factories and proposed solutions that could allow them to operate and use energy more efficiently. Our customers, particularly those that are leading global companies, are constantly searching for ways to improve efficiency, enhance safety, and protect the environment, and they are very interested in the advanced technologies of Japan and best practices from around the world. The use of our products results in significant reductions of NO_x, SO_x, and other harmful chemical substances that are generated when fossil fuels are burned, making plants cleaner and safer for the environment. By introducing to our customers around the world Yokogawa technologies that have long been in wide use here in Japan, we believe that we can contribute to society.

Unno: Yokogawa expects to provide with not only sales of very high quality products to customers, but also broader solutions for business and society at large.

Kaihori: One of our strengths is the ability to provide reliable products and services that our customers can count on 365 days a year. In addition, we must continually go a step further and think ahead from now on. In other words, we must pursue a comprehensive solutions approach that helps our customers improve efficiency and employee safety and protect the environment.

Support of sustainable development on a community basis

Unno: By the way, Yokogawa, like other companies, is focusing on emerging markets which are expected to grow further. You must dig deeper to understand what customers can actually gain by using Yokogawa products. To expand the customer base in a specific area, it is important to win the trust of the stakeholders who live there. You must work together with local companies to find solutions to issues faced by their community. To do this, it is necessary to understand the needs of stakeholders such as local government bodies, companies, and citizens. Rather than focusing just on philanthropy, it's important to think about how you can contribute through your business activities.



Kaihori: Emerging economies and developing nations have the basic need to become prosperous, and for that purpose they use energy and resources. We provide the products needed to do that. Also, these markets are now thinking they cannot go on forever with the current formula of relying on foreign capital and engineers to manufacture products. Let me explain. Our Group is handling many projects in Saudi Arabia, Abu Dhabi, and other oil- and gas-producing countries in the Middle East, and we've realized that there is a strong need to utilize local talent. As software production, including engineering, can be done anywhere, they want us to hire people from their countries to create this software locally, not at our sites in Japan and Singapore. Even though we'd like to do this, we cannot always find enough people who have the required skills. That's why we are starting from the very beginning, such as by partnering with universities in Saudi Arabia, sending lecturers, and receiving interns. We are passing on measurement and control related engineering skills to university students and giving them opportunities to work with our employees and actually use this knowledge.

Unno: Is it like operating a school within the company?



An engineering educational facility in the Dhahran Techno Valley established by Yokogawa

Kaihori: It's not a school per se; it's an internship program that lets students work in our Saudi Arabia office. We also have unique training programs that give trainees the opportunity to visit our sites in Singapore and Japan. Additionally, we're running an internship program in collaboration with a local educational institution in Abu Dhabi, in the United Arab Emirates. The UAE is one of the few countries in the Middle East where women are encouraged to work, but actually there aren't enough job openings yet for women. So, our Abu Dhabi office began hiring female interns in 2011, starting with a group of five.

Unno: After graduation, will these students join the Yokogawa Group?

Kaihoru: Some will go to work for us in Saudi Arabia, and others will take positions at our customers. Either way, it's a good thing for us. By investing our resources and technologies in a country and providing education to locals, we can ensure the long-term viability of our business in that country. We want to apply this strategy elsewhere.

Unno: Technical development and human resource development are areas that are of great interest to emerging countries, so it would be effective to clearly and systematically demonstrate in these markets, with their different cultures, that Yokogawa is dedicated to these programs. That is a given in Japan and it doesn't need to be explained to Japanese, but in other cultures an active effort must be made to promote this aspect of your business. ISO26000 (Guidance on Social Responsibility) includes a section called "Community Involvement and Development" that stresses the importance of benefiting the local community and enabling the people there to stand on their own two feet by, for example, helping them acquire new skills and creating jobs. This, in turn, is a basic and important element for ensuring the long-term viability of local communities.

Kaihoru: There are many things we should do in the areas of CSR and philanthropy, but we want to focus on those things that we do best. Providing training in measurement and control is not something that every company can do. By continuing to contribute in this way to countries and regions without thinking too much about short-term gains, we can help to put them on a more solid economic footing and eventually will reap benefits such as increased business inquiries. This way of thinking is very different from how we conduct our business in advanced nations, where efficiency and cost are given top priority. In factories, our products often have to keep operating for more than 10 years, so we can't just sell our products, pocket the money, and say goodbye. We must consider how to ensure the long-term viability of our business through such activities as fostering local talent.



A Special polymer plant of Nitriplex in Brazil controlled by Yokogawa's system

Unno: You're talking about ensuring the long-term viability of your business and local communities as well.

Kaihoru: As a matter of fact, in addition to providing training in engineering, we're also starting to collaborate in R&D with one of the Saudi Arabian universities that I mentioned earlier. We've suggested research themes and proposed joint research with the university, local companies, our customers, and other parties. There are many interesting themes that can best be studied in Saudi Arabia, such as marine pollution and efficient exploration for natural resources.

Unno: In the CSR field, such involvement with the local community is regarded as "stakeholder engagement." It is based on the concept that local stakeholders are potential business partners. Personally, I believe that a business can attain sustainability more easily by adopting this premise from the beginning. Particularly in energy and infrastructure projects in emerging countries, stakeholder engagement is a must from the standpoint of managing business risks.

Respecting human rights and improving occupational safety



Kaihori: That's right. Commonsense varies from one country to another, just like with social customs, religion, and many other things. We conduct business around the globe in advanced, emerging, and developing nations — so we make sure to follow local customs and rules. Take human rights, for example. What it means varies from country to country. People's perceptions of the importance of preventing corruption also differ in advanced and emerging nations. Of course, as a company we need unified, global action guidelines. That's why we joined the United Nations Global Compact in 2009 and adopted its principles on human rights, labor standards, the environment, and anti-corruption as the standards for our Group companies around the world.

Unno: Human rights and labor issues were highlighted in the ISO26000 standard and the United Nations Global Compact, and global awareness of these issues has increased.

Kaihori: As I mentioned earlier, I think of the three key themes — improving efficiency, enhancing safety, and protecting the environment — all the time. Of these, labor safety is an area where our customers, especially leading companies in advanced nations that do business in the oil and materials industries, are fairly ahead. For example, these customers are requiring us to gather and submit on a regular basis various types of hard data on labor safety for work done on our premises and at customer sites. The reality is that today we won't receive orders unless we can prove the safety of our work practices. Furthermore, these leading companies in advanced nations are investing in emerging and developing nations, and are conducting business there based on a similar safety policy. Naturally, efforts to enhance safety will become more widespread around the world, especially in the energy and materials industries.

Unno: As citizen's perceptions of what is important evolve around the world, companies are asked to rethink the way they conduct business and manage their organizations. Gone is the time in which businesses only had to think about costs in order to sell products.

Kaihori: From now on, it will become more important to provide solutions, including consultation, rather than products by thinking from the customer's viewpoint. We are doing business with customers in various industries, so we can, for example, utilize our experience in the medical field to provide solutions based on best practices to our customers in the food industry. High product quality has been our strength throughout our long history, but now we're combining this with consulting and engineering services that add value, in order to provide total solutions to our customers.

Unno: I'm sure that the concept of sustainability is firmly ingrained in this.

Kaihori: Since the collapse of Lehman Brothers, emerging and developing nations have gained significant momentum. Citizen's perceptions of what is important have clearly changed, too. Prosperity is no longer just about financial gain. I believe it is important for us to address the question of how we will achieve sustainability at the global and community level. Yokogawa will not waver from its mission of being a force for global progress that shows respect for our fellow human beings and protects nature.



Unno: We look forward to hearing more about sustainability-oriented activities at Yokogawa.

Creating value for society and our customers

Control devices and solutions from Yokogawa are used in cities and factories around the world.

Many Yokogawa products are in operation constantly in its customers' factories in a broad-range of industries such as urban infrastructure for electricity, gas and water, petroleum, chemical, iron and steel, pulp and paper, pharmaceutical, as well as food product fields. Control systems from Yokogawa control stable and optimum operations by comprehensively monitoring large-scale petrochemical factories and pipelines that are built over long distances. Yokogawa products also enable the efficient use of energy and resources and increase the production and quality of the factory. Yokogawa contributes to economic growth by enriching the lifestyles of people.


On another front, Yokogawa products provide features to increase safety and reduce the environmental burden. These products preemptively prevent malfunctions and accidents using the latest digital network technology by liberating people from dangerous tasks through the automation of on-site operations.

CO2 as well as NOx and SOx emissions which cause air pollution are drastically limited by utilizing the advanced features of control systems and optimizing combustion control. Many Yokogawa products are also used for vital water resources and the development of natural energy.

The following introduces several ways in which Yokogawa is making these types of contributions.


Example 1 Singapore YTL PowerSeraya Desalination Plant

▶ **Contributing to vital water resources through Yokogawa products in a desalination plant for seawater**

A photograph of the Singapore YTL PowerSeraya Desalination Plant, showing industrial structures, pipes, and a large blue cylindrical tank under a clear sky.

Example 2 Mongolia Ulaanbaatar 4th Thermal Power Plant

▶ **Contributing to energy conservation and reduction in air pollution through renewal of a coal-fired thermal power plant**

A photograph of the Mongolia Ulaanbaatar 4th Thermal Power Plant, showing industrial structures and smokestacks emitting white smoke against a hazy background.

Example 1 Singapore YTL PowerSeraya Desalination Plant

Contributing to vital water resources through Yokogawa products in a desalination plant for seawater



YTL PowerSeraya Pte. Limited, a Singapore-based integrated energy company, is in the business of producing, wholesaling, trading and retailing of energy, with a primary focus on electricity. Their core generation facilities, located on Jurong Island, have a licensed capacity of 3,100 MW.

Efforts to process sewage and seawater as drinking and service water are advancing in Singapore, where water resources are scarce. YTL PowerSeraya has a desalination plant on Jurong Island, which has the capacity to produce 10,000 m³ of water per day to convert seawater into drinking and service water.

Tight process controls are necessary to ensure a stable supply of safe and quality water. All of the operations at this desalination plant are monitored and controlled by the STARDOM network-based control system and the FAST/TOOLS SCADA system from Yokogawa.

Although there are several different ways to desalinate seawater, this plant uses a method that passes the seawater through a specialized membrane (semipermeable) to filter out the salt by applying pressure to the seawater. Globally, this was the first time a 16-inch seawater reverse osmosis (SWRO) membrane has ever been used. The SWRO is strictly monitored by devices from Yokogawa's measuring conductivity and pH levels to quickly detect any saltwater leakage. Precise measurements are required to increase the lifespan of expensive SWRO because these membranes are easily damaged from even a small amount of seawater leaks.

Electromagnetic flowmeters from Yokogawa seek to maintain the quality of clean water by stringently measuring various chemical agents utilized in the facility.

Water is becoming more vital throughout the world due to weather changes and an increasing population. Measurement and control technology from Yokogawa contributes to a stable and safe water supply.



SWRO process

*Jurong Island, the second largest island next to the main island, is formed from the amalgamation of the seven offshore islands located southwest of the main island. The Singapore Government is also developing the island to promote the petrochemical industry with an aim of furthering economic growth.



Main control room



Conductivity/pH meters



Electromagnetic flowmeter

Example 2 Mongolia Ulaanbaatar 4th Thermal Power Plant

Contributing to energy conservation and reduction in air pollution through renewal of a coal-fired thermal power plant



Mongolia is an arctic land where the lowest temperatures can drop to minus 40 degrees Celsius during the heart of winter. The heat and electricity generated by Thermal Power Plant No. 4 in the capital city of Ulaanbaatar is an important lifeline for the people living there.

Yokogawa was involved in renewing this power plant for years and delivered control systems and field instrumentation such as flowmeters for all eight boilers. The equipment of the power plant before the renewal was significantly decrepit while most parts for repair were no longer available. Plant shutdowns were a frequent occurrence due to equipment malfunctions and accidents because the blueprints from the factory construction which were required for maintenance had been almost completely lost. The plant shutdowns caused power outages and reduced the temperature of the hot water. The air throughout a large region of land had also been heavily polluted by the large amounts of soot emitted into the air due to the coal combustion control that did not operate properly.

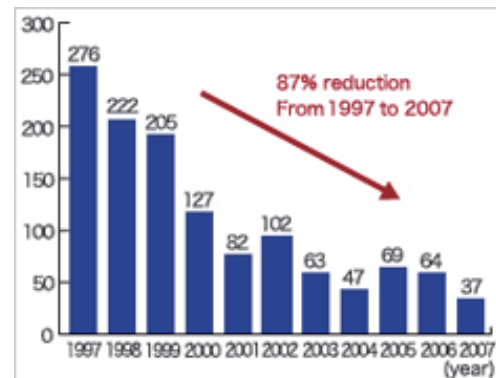
The renewal started first from a site survey to reproduce the lost blueprints. All of the device settings and pipes were thoroughly investigated by a project team formulated with the user. The boilers were controlled manually, and the valves supplying combustion air to the boilers were left fully-open at all times regardless of the amount of coal fired. Naturally, the combustion efficiency was extremely low. The original combustion system using indirect firing had a high risk of explosions and was low in efficiency per se.

These combustion systems were replaced with safer and more efficient direct combustion systems during the renewal and all operations of boilers including those for ancillary equipment were integrated in highly reliable Yokogawa distributed control systems. The latest digital control functions were introduced with particular attention to enabling smooth transition to the operating environment under the new systems while maintaining the existing operation scheme. For this, Yokogawa developed a new training simulator to help operators quickly learn safe plant operations with the new systems and enabled transition to the latest screen-based operations without trouble.

Thanks to the improved reliability and safety of equipment and increased skill of the operators, malfunctions and accidents were reduced drastically. With all the boilers controlled by the latest systems, the power station has increased the combustion efficiency immensely to produce more energy with the same amount of coal consumed. This increased the amounts of electricity and hot water, ensuring stable supply to Ulaanbaatar City. The air pollution caused by soot, nitrogen oxides (NO_x), and sulfur oxides (SO_x) emissions has also been vastly reduced at the same time.



Boiler control room



Number of plant shutdowns per year

Special Features 02 Lifecycle Assessment of Product

Yokogawa has introduced the life cycle assessment (LCA) to the product design phase as a part of an effort to minimize our products' environment impact in 1999. Concurrently, we became the first in the measuring instrument industry to use a unique "Environmentally Friendly" labeling system.

In 2011 we launched a project to further promote our LCA effort, and we have decided to disclose the results of LCA for some of our products on the website of the Yokogawa Group. When LCA information is disclosed, the applicable product is "LCA-labeled" in its product introduction webpage and sales brochure to indicate the availability of such information, as shown in the right side figure.



LCAlabel

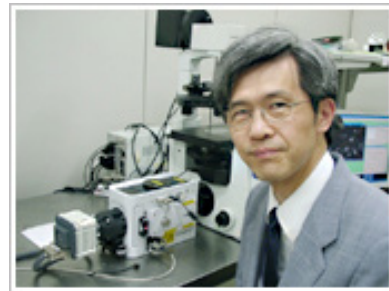
- ⇒ Environmentally Friendly Products
- ⇒ List of LCA-Labeled Products

Comment by person in charge of LCA-Labeled product development

CSU-X1 , Confocal Scanner Unit, is capable of continuously capturing and monitoring three-dimensional images of cells. This scanning equipment is widely used for research in biotechnology. Yokogawa's proprietary laser radiation technology has made it possible to shoot up to 1,000 images per second and capture beautiful, true-color videos.

The usage efficiency of the laser light in the new model is double that of the previous model. Therefore, the scanner can now be used with a laser light source having a smaller rating, which helps reduce the power consumption of the laser light source.

Formerly, when optical component(s) in the scanner unit had to be replaced to accommodate the customer's specific research needs, the unit was returned to Yokogawa for replacement. Our new model makes it possible for the customer to replace any optical component right where the scanner unit is installed. This helps reduce the environmental burden caused by transporting the CSU-X1, which is used by customers all over the world.



Hideo Hirukawa
Life Science Headquarters
R&D Department
Yokogawa Electric

Yokogawa has established the corporate philosophy and the standards of business conduct applied to all the group companies. These policies clearly describe Yokogawa's corporate responsibility.

- ⇒ Corporate Philosophy
- ⇒ Standards of Business Conduct

Also, the Yokogawa Group Compliance Guidelines give clear rules and guidelines relating to human rights, obedience to the law, workplace safety, hygiene, etc.

- ⇒ Yokogawa Group Compliance Guidelines (Human Rights)

Yokogawa's Approach to CSR

Yokogawa's Contribution to Society through its Core Business

An enterprise should sustain itself and grow with the changing society. Yokogawa's corporate philosophy states that its goal is "to contribute to society through broad-ranging activities in the areas of measurement, control, and information." As Yokogawa takes pride in the fact that it is supporting the industries in the world, it is fulfilling our responsibility to society.

In addition, to address the issues that society and global environment are facing, Yokogawa contributes to the society by utilizing the "technology for measurements, controls, and information." It utilizes these methods in the areas of energy conservation solutions, new energy development support, environmental load measurement and analysis, and medical and pharmaceutical development support.

Responsibility to Stakeholders

In Standards of Business Conduct for the Yokogawa Group, five "Basic Principles" are defined: Realizing the Yokogawa Philosophy, Customer Satisfaction, Observance of Laws and Regulations, Respect for Human Rights, and Order and Safety of Community and Society. In addition, the Basic Attitude of the Yokogawa Group defines its contribution to global environmental protection and relationship with the stakeholders. Abiding by these principles, Yokogawa strives to meet the expectations of stakeholders, which includes employees, customers, and stockholders.

At Yokogawa, all employees are considered an asset (human resource), and as such, it strives to continually improve its work environment and proactively provide its employees with opportunities to develop their abilities. In addition, it strives to meet the expectations of its customers, with its motto since the inception, "Quality First." Being also mindful as "good citizens," as declared in its corporate philosophy, Yokogawa is actively engaged with local communities and social action programs through its employee volunteers.

Corporate Governance

We at Yokogawa recognize that the basic mission of corporate management is to ensure sound and sustainable growth, and to earn the trust of our shareholders and other stakeholders, and are working to enhance corporate governance accordingly. By appointing multiple outside directors and auditors, we are making the decision-making process of the Board of Directors more transparent. At the same time, we are improving the function to audit the running of the Company, putting in place the internal control systems for proper, efficient business operations, and also working on risk management, among others. In addition, as a business that is trusted by society through its fair and honest business activities, Yokogawa makes an effort to cultivate a corporate culture that gives compliance the highest priority above all else.



UN Global Compact is a set of ten principles that all Yokogawa people should share its value. Yokogawa respects the ISO26000 guidance in our decisions and actions.

CSR Promotion Structure

We have established a dedicated CSR group within the Audit and Compliance Headquarters, whose functional scope also includes overseeing internal controls. With this CSR group, which drives the activities aimed at CSR, environmental protection, occupational safety and health, and social contribution (citizenship), we have put in place a system for the implementation of more comprehensive CSR activities throughout the entire group.

⇒ Internal Control System

The United Nations Global Compact

In January 2009, Yokogawa participated in the "United Nations Global Compact," an international initiative that promotes 10 principles concerning human rights, labor standards, environment, and anti-corruption. As of February 2012, 10,032 groups are participating in the world, and Yokogawa is the 76th Japanese company to participate in it. An effort has been ongoing to share the ethos and the standard of the Global Compact with all workers within the Group and all the customers and suppliers connected through its supply chains.

⇒ UN Global Compact Index

ISO 26000

ISO 26000, issued by the International Standardization Organization in November 2010, is an international standard for the social responsibilities of corporate entities, presenting seven core subjects including organizational governance, human rights, labor practices, environment and fair operating practices. The standard serves as a guidance manual instead of defining and requiring conformity assessment or third-party certification such as in the case of ISO 9000 and ISO 14000.

Yokogawa, as a company active in the global marketplace, observes ISO 26000 and upholds corporate governance as a key principle of CSR in running the company. As such, we are committed to CSR activities designed to contribute to society through our business operations, conserve the environment and protect human rights, to meet the expectations of stakeholders.



Mizue Unno

Managing Director, So-Tech Consulting Inc.

After graduating from Chiba University Graduate School of Horticulture, Ms. Unno worked for various consulting firms including Roland Berger Strategy Consultants until she founded So-Tech Consulting Inc. in 1996. At present she provides Japanese firms advice and support in practical corporate activities in the areas of sustainability and CSR from a global management perspective. She is also a part-time graduate school lecturer of the University of Tokyo and serves as a member in various government committees. Publications include "Understanding the Basics of Corporate Social Responsibility (CSR)" (Chukei Publishing Co.).

Strategic CSR with Sustainability Elements Embedded into the Business Strategies

Last year, Yokogawa Electric Corporation announced the mid-term business plan "Evolution 2015," which revealed the renewed strategy for the future. Resource-rich countries and emerging economies are considered as the prosperous regions in Yokogawa's growth strategy, in which it is projected that an expansion of Yokogawa's business will help resolve their social issues. Moreover, the plan includes not only the conventional energy conservation but also the field of renewable energy as one of key target industries. Yokogawa's strategic CSR initiatives are now clearly defined, having incorporated the element of sustainability at the forefront of the business plan.

Yokogawa has also shifted its fundamental stance from an internal R&D-oriented business to that of a solution business to address specific customer needs. Such a shift, thus, indicates that it is critical for Yokogawa's business to address the needs of stakeholders. If Yokogawa takes a step further, looking at the business from the perspective of how it can address the needs of society as a whole and bring benefits to community instead of simply responding to customers' needs, Yokogawa will be able to enhance its corporate value.

Fundamental CSR Part of the Strategy

As for the fundamental CSR part of the strategy--namely human resources, community development and the environment--Yokogawa should deploy a management approach that will cultivate environmental and social awareness in daily operations by implementing ISO 26000 framework, rather than approach that is oriented toward compliance and control.

Given the continued growth and global expansion of Yokogawa's business, the globalization of business management has become a significant challenge. The mid-term business plan is therefore designed to streamline the entire company organization and system on a global scale, thereby encouraging the aggregation and utilization of business know-how. To carry out the CSR activities, each regional organization is required to take initiative meeting the local needs instead of receiving the majority of their planning and instructions from Japan, though those regions must also be managed globally.

- **Human Resources**

Human resource management is the core of global strategy. Accordingly, as part of the global work-force strategy, Yokogawa has made improvements in regard to the acquisition and utilization of human resources, as well as a setup of the human resource development system. Please take those improvements into account as Yokogawa conducts the CSR activities.

Also, the labor practice issues in emerging economies have become a critical matter and are now viewed as human-rights issues. Thus the Yokogawa Group must handle those issues with special attention. In countries having inadequate governance, such matters have frequently turned into labor disputes, posing a significant management risk. Yokogawa, in undertaking various projects in such regions, must focus on those issues going forward. The global condition is such that the global headquarters (or Yokogawa Electric, in this case) must be held responsible not only for its domestic issues, but also for the issues of its worldwide supply chain. It is therefore critical that Yokogawa has a firm grasp of local labor conditions so as to ensure that the supply chain CSR guidelines, which have already been set, are observed locally and that sufficient communication with suppliers is maintained. Yokogawa's global organizational structure plays a very important role in this regard.

- **Community Development**

Yokogawa established the Technical Center at the Kazan Institute of Technology (in the Republic of Tatarstan) and has thereby made a significant contribution to the region through the development of local human resources. Among the community activities, considerable emphasis is placed on the contributions and activities (which go beyond donations and charities) that can help the region advance economic independence and develop human resources. Yokogawa must not only report the examples of its activities but also demonstrate that it clearly incorporates local technological development into the basic policy of its CSR as a fundamental, community strategic initiative.

Regional volunteer programs are also imperative. It would be effective to focus on activities related to Yokogawa's core business. This will make it easier to gain support and understanding from the community, as well as to apply the models that are already in use to other group companies.

- **Environment**

Yokogawa deserves high marks for its efforts in studying the activities that involve sustainability indices, in which environmental issues are of principal importance. It has attracted a lot of attention worldwide in conducting the evaluation of what sort of internal/external impact a sustainability-related activity can have. This does not need to be done in any particular format, but it is up to each company to select the key areas and the method of assessment. It is crucial that the company incorporates the Yokogawa style into its activities. It is essential that Yokogawa shares the sustainability indices not only within the company but also with its business partners, so that it can develop a system in which the CSR activities can expand continuously.

CSR Rating by the Dow Jones Sustainability Indexes



Yokogawa Electric Corporation has been selected to the Dow Jones Sustainability Asia Pacific Index (DJSI Asia Pacific) and to the Dow Jones Sustainability World Enlarged Index (DJSI World Enlarged).

The DJSI is a leading corporate social responsibility index developed jointly by Dow Jones of the United States and Sustainability Asset Management (SAM) Group, a Swiss research and rating company. The selection of a company to the DJSI is based on a wide ranging analysis of economic, environmental, and social criteria. In 2011, 600 major companies in the Asia Pacific were surveyed for the DJSI Asia Pacific, and of this total 156 companies were selected, including 79 Japanese companies. For the DJSI

Socially Responsible Investment Stock Index by Morningstar (Japan)



Yokogawa Electric Corporation, as of January 2012, is one of 150 companies constituting the MS-SRI (Morningstar Socially Responsible Investment Index), which is an SRI stock index established by Morningstar (Japan).

"Leading Company in Socially Responsible Management" (in Japan), by the Japan Research Institute, Limited

Yokogawa Electric Corporation, in March 2012, was selected as a company leading in the areas of social responsibility, governance, environmental management and provision of business solutions to social issues, from among 2,000 companies including those listed in the first section of the Tokyo Stock Exchange.

2011 "Global Customer Value Enhancement Award" by Frost & Sullivan



Yokogawa Electric Corporation has received the 2011 "Global Customer Value Enhancement Award" from Frost & Sullivan, a leading global research firm.

⇒ Press Release (April 13, 2011)

"Ideal Companies to Work for in 2011" by Nikkei Inc. (Japan)

Yokogawa Electric Corporation, as of September 2011, was ranked 149th among the 1,575 "Ideal Companies to Work for in 2011," such companies having been selected by Nikkei Inc., based on their personnel administration systems and utilization condition of those systems.

2011 Jiangsu Friendship Award in China (Jiangsu Province, China)

Katsushi Aoki, General Manager of Yokogawa Electric China (Jiangsu) Co., Ltd., was presented the 2011 "Jiangsu Friendship Award" by the Jiangsu Provincial People's Government of China. The "Friendship Award" is given each year to a foreign national or the top management of a foreign corporation that has contributed over many years to the development of science and technology, industry, education, etc., of Jiangsu Province in China. (September 2011)



Katsushi Aoki, General Manager of Yokogawa Electric China
(Right in the photo)

2011 Health, Labour and Welfare Minister's Award on Vocational Development (Japan)

Yokogawa Manufacturing's Kofu Factory received the "2011 Health, Labour and Welfare Minister's Award on Vocational Development" as an excellent business site in terms of skills certification. The Kofu Factory has sent skills certification committee members to the national skills certification programs and provided venues for practical skills tests over many years, making significant contributions to the promotion of skills certification systems in Japan. Yokogawa Manufacturing is actively working to train people, also by setting up an in-house Global Manufacturing (Monozukuri) Center to promote skills certifications for machining, electronic equipment manufacturing, etc.

Excellence Award at the Fourth "Monozukuri Nippon Grand Awards" (Japan)

Yokogawa Sichuan Instrument Co., Ltd. (headquartered in Chongqing) was awarded the Excellence Award in the Overseas Development category at the fourth "Monozukuri Nippon Grand Awards." Created by the Japanese government to carry over and develop the skills and expertise of manufacturing, the biannual "Monozukuri Nippon Grand Awards" recognize talented individuals, etc., engaged in the manufacturing field. Among others, the Overseas Development category honors an individual or group of individuals working at a Japanese company who contributed to the productivity improvement, market expansion, etc., of local Japanese companies by transplanting Japanese manufacturing/production processes, products/technologies developed in Japan, and the country's traditional technologies, in East Asian countries, etc. Chongqing Yokogawa Sichuan Instrument was recognized for its strong leadership in localization and manufacturing of high-quality products to gain the trust of customers, thereby helping Yokogawa obtain the largest share in China for differential pressure/pressure transmitters. (February 2012)

2011 Tokyo Labour Bureau Encouragement Award (Tokyo Metropolitan Government)

Yokogawa Manufacturing's Oume Factory received the Tokyo Labour Bureau Encouragement Award for actively promoting labor, safety and health activities and achieving/maintaining good safety and health standards. Through thoroughgoing safety and health activities daily, the Oume Factory has been recording zero unscheduled shutdowns and accidents since 2006. This award was given to three factories including the Oume Factory. (November 2011)

2011 Sawayaka Prefectural Land/Building Award (Hyogo Prefectural Government)

Yokogawa received the "2011 Sawayaka Prefectural Land/Building Award." This award recognizes construction projects ordered by the Hyogo Prefecture that have been executed with an excellent standard. Yokogawa was recognized for completing a high-quality project to update a other company's central monitoring & control system at the Inagawa Regional Waterworks Office of the Hyogo Prefecture by conducting a thorough assessment of the existing facilities and investigating proper specifications thoroughly. (December 2011)



The Yokogawa Group's Environmental Management

We at Yokogawa regard conservation of global environment as an important management issue and strive to implement the environmental management needed to address it. Specifically, we help our customers be "green" by, for example, developing products that allow for harmonious coexistence of mankind with nature and providing environmental solutions that help analyze/improve environmental impact generated through their business activities, just as we actively endeavor to reduce the environmental impact in our business operations.



- Environmental Policy
- Organization
- ISO14001 Certifications
- Environmental Milestones

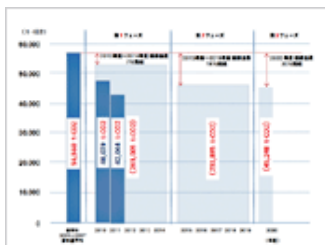
Promoting Environmental Management within Customers



We supply green, energy saving solutions that help our customers to reduce their environmental impact and environmentally friendly products developed based on our environmental assessment and Lifecycle Assessment (LCA) .

- Environmental Solutions
- Environmental Friendly Products

Promoting Environmental Management within Yokogawa



Yokogawa are positively working to reducing the environmental impact of our own factories and offices. We have set CO2 emissions reduction targets for Yokogawa group companies in Japan and we are making active effort to achieve the goal for 2020.

- Goals And Achievements
- Compliance and Auditing
- Environmental Impact
- Environmental Accounting
- Improvement of Production Line
- Efficient Use of Water
- Global Warming Prevention
- Chemical Substances Control and Reduction
- Waste Reduction and Resource Saving
- Green Procurement and Green Purchasing

Promoting Biodiversity



In keeping with the Yokogawa's environmental policy, the Yokogawa Group is initiating and participating in programs aimed at preserving biodiversity.

- Promoting Biodiversity

Based on the Yokogawa philosophy which states, "Our goal is to contribute to society through broad-ranging activities in the areas of measurement, control, and information," and recognizing that environmental conservation of the precious earth is a critical issue for the whole of humanity, each site of the Group shall strive, in all its activities, to:

1. Establish, maintain, and improve its environmental management system.

Each site promotes and continuously improves its global environmental conservation activities, strives to prevent environmental contamination, and establishes an environmental management system. To maintain and improve the system, each site accurately evaluates the burden of its activities on the environment including climate change, biodiversity and water resources, sets environmental objectives and targets that are technically and economically viable, and carries out environmental audits.

2. Provide environmental training.

Each site actively provides training for global environmental conservation to ensure that employees understand the Environmental Philosophy, Code of Conduct for Environmental Conservation, and Environmental Policy of the Yokogawa Group to improve their environmental awareness, and to act autonomously with consideration of the environment in both their work and life in the local community.

3. Abide by legal regulations.

Each site abides by laws, legal regulations, and other requirements applied to environmental aspects, in order to proactively conserve the global environment.

4. Carry out resource recycling-based operations.

Throughout its activities, each site endeavors to utilize energy and resources efficiently, to prevent global warming, to reduce waste, and to promote the reuse and recycling of resources with the aim of eliminating emissions.

5. Minimize environmental pollution.

Each site strives to eliminate the use of substances that adversely impact the environment, such as toxic chemicals, and ozone-destroying substances, by using safe substitutes or employing safe technologies to avoid the risk of environmental pollution.

6. Create environmentally friendly products.

Each site develops and produces environmentally friendly "green" products in consideration of the environmental burden throughout the products' lifecycles, from material purchase, manufacture, and distribution to their use and disposal.

7. Supply society with environmental solutions.

Each site supplies society with value-added products and services for conserving the earth's environment through measurement, control, and information technologies.

8. Contribute to local communities.

Each site encourages its employees to participate in environmental conservation activities under their own initiative as good corporate citizens.

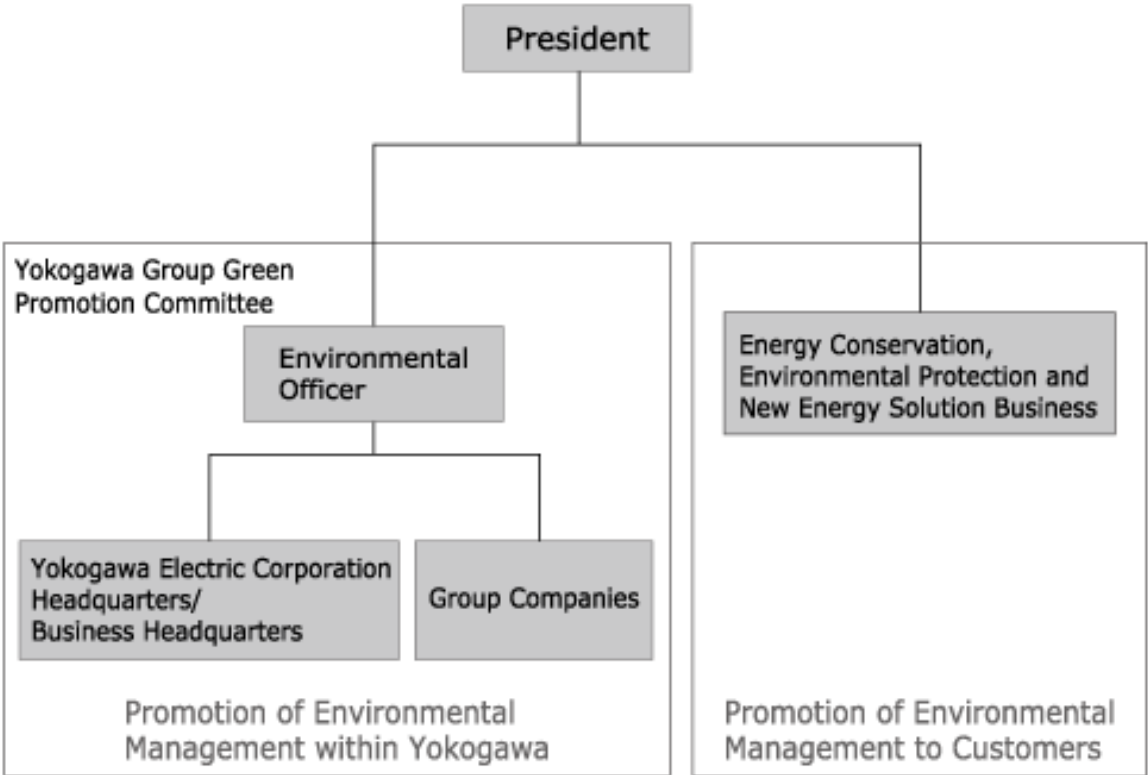
9. Make environmental information available to the public.

Each site actively makes environmental information, including its environmental policy and conservation activities, available to the general public.

April 2012
Shuhei Sakuno
Senior Vice President
Audit & Compliance Headquarters
Yokogawa Electric Corporation

To promote the environmental management principle of the Yokogawa Group, we established the "Yokogawa Group Green Promotion Committee" with the aim of stepping up group-wide efforts to conserve the global environment and prevent climate change. The Committee, chaired by the Yokogawa Group's Environmental Officer, provides leadership the Yokogawa Group companies throughout inside and outside Japan in order to drive environmental management and implement various measures designed to conserve the global environment and prevent climate change.

Organization of Environmental Management Promotion



Yokogawa Group's ISO 14001-certified sites (including KES*) are as follows:

ISO14001

As of the end of March 2012

Factories		Date Certified
Yokogawa Electric Corporation Headquarters & Main Factory		July 1997
Yokogawa Manufacturing Corporation (Komine, Kofu, Ome, Uenohara and Headquarters Factories)		July 1997
Yokogawa Meters & Instruments Corporation		July 1997
Yokogawa Field Engineering Service Corporation		February 2000
Yokogawa Denshikiki Co., Ltd.		November 2000
Yokogawa Digital Computer Corporation		September 2007
Suzhou Yokogawa Meter Company	China (Suzhou)	May 1998
Yokogawa Shanghai Instrumentation Co., Ltd.	China (Shanghai)	March 2000
Yokogawa Sichuan Instrument Co., Ltd.	China (Chongqing)	December 2000
Yokogawa Electric China Co., Ltd.	China (Suzhou)	May 2004
Yokogawa Electric Asia Pte. Ltd.	Singapore	October 1998
Yokogawa Engineering Asia Pte. Ltd.	Singapore	August 2001
P.T. Yokogawa Manufacturing Batam	Indonesia	April 2000
Yokogawa Corporation of America	USA	June 2005
Yokogawa Electronics Manufacturing Korea Co., Ltd.	South Korea	December 2004
Yokogawa Measuring Instruments Korea Corp.	South Korea	March 2007
Yokogawa Philippines, Inc.	Philippines	June 2007
Rota Yokogawa GmbH & Co.KG	Germany	August 2011

* "KES" refers to the KES Environmental Management System Standard.

Various global environmental conservation activities had been carried out before Yokogawa Kofu office was certified with the ISO14001 certification in 1997 followed by officially implementing the environmental management system across the entire Yokogawa group. The environmental practices of Yokogawa group since 1971 are listed below in chronological order.

History of Environmental Practices of Yokogawa (in time series)

- 1971 ~
- 1980 ~
- 1990 ~
- 2000 ~
- 2010 ~

1971		Yokogawa establishes a pollution prevention organization
1974	July	Yokogawa completes construction of wastewater treatment facilities to comply with ordinance of Tokyo compliant with municipal bylaws
1987	May	Yokogawa begins environmental assessment studies
1989	October	Yokogawa establishes a chlorofluorocarbon (CFC) reduction committee
1991	April	Yokogawa sets up an organization to promote an Environment management
	August	Yokogawa starts "Save the Earth" campaign
1993	February	Yokogawa appoints a Vice President of Environmental Management and forms a Global Environment Committee
	July	Yokogawa establishes a voluntary environmental activities plan
1994	August	Yokogawa reports the results of voluntary environmental activities in fiscal year 1993
	December	Yokogawa completely eliminates specific CFCs and trichloroethane for cleaning
1995	June	Yokogawa Board of Directors decided to obtain ISO14001 certification and merge a voluntary environmental activity plan into ISO14001 plan.
	October	Yokogawa reorganize a Global Environment Committee
1996	March	Yokogawa establishes corporate rules for environmental management
	May	Yokogawa forms a Global Environment Committee at Yokogawa Electric Headquarters & Main Factory, Kofu Office (current Yokogawa Manufacturing Kofu Factory), and Komine Factory (current Yokogawa Manufacturing Komine Factory). Solar power generators for disaster use installed at Yokogawa Electric Headquarters & Main Factory. Yokogawa signs a disaster prevention accord with Musashino City.
1997	April	Issued "Green Times", a company newsletter
	July	The Kofu Office (current Yokogawa Manufacturing Kofu Factory) obtains ISO14001 certification
1998	February	Yokogawa Electric Headquarters & Main Factory and the Komine Factory (current Yokogawa Manufacturing Komine Factory) obtain ISO14001 certification
	May	Two co-generation power generators (585 kw,2 units) go online at the new main building of Yokogawa Electric Headquarters & Main Factory
	June	Yokogawa begins publishing Yokogawa Environmental Catalogue
1999	September	Yokogawa publishes Yokogawa Environmental Report 1999. Also the company introduces environmental accounting and makes data available to public.
	November	Yokogawa introduces environmental labeling (Type II)
2000	July	Yokogawa Electric Headquarters & Main Factory reached its goal of generating zero landfilled waste

	August	Yokogawa introduces Japan's first returnable container recycling service for customers
	September	Yokogawa publishes Yokogawa Group Environmental Report 2000 and introduces third-party verification system
	November	Suzhou Yokogawa Meter Co. joins the China-Japan 3E (Energy, Environment, and Economy) Research Project and is selected as a model company for environmental accounting study
2001	March	Yokogawa establishes The principles of Yokogawa Group Environmental Management Standards.
	July	Yokogawa publishes Yokogawa Group Environmental Report 2001
	September	Three Yokogawa sites receive comprehensive ISO14001 certification
	November	The Kofu Office (current Yokogawa Manufacturing Kofu Factory) reached its goal of generating zero landfill waste
2002	February	The Yokogawa Manufacturing Akiruno Office (current Yokogawa Manufacturing Komine Factory) accomplishes its goal of generating zero landfill waste. The Kofu Office (current Yokogawa Manufacturing Kofu Factory) installs a light through type solar power generating system
	July	Yokogawa publishes Yokogawa Group Environmental Report 2002
	August	Four Yokogawa sites receive comprehensive ISO14001 certification
2003	February	The Econo-Pilot energy-saving system for water pumps receive the Agency of Natural Resources and Energy Director-General's Award at the Energy Conservation Award ceremony. The Kofu Office (current Yokogawa Manufacturing Kofu Factory) receives award from the Director-General of the Kanto Bureau of Economy, Trade and Industry in recognition of its achievements in reducing energy consumption.
	July	Yokogawa publishes Yokogawa Group Environmental Report 2003
	October	The Plant of newly established Yokogawa Electric China starts operations in Suzhou as an environmentally aware manufacturing site
2004	March	New environmentally optimized facilities at the Yokogawa Manufacturing Komine Factory and Kofu Factory start operations
	June	Yokogawa publishes Yokogawa Group Environmental Management Report 2004
	August	Yokogawa Electric Headquarters & Main Factory obtain a separate ISO14001 certification
2005	March	Energy Conservation Guided Tours start at the Yokogawa Manufacturing Kofu Factory
	April	Yokogawa joins the Team Minus 6% national campaign
	June	Yokogawa publishes Yokogawa Group Environmental Management Report 2005
2006	March	Yokogawa Manufacturing Kofu Factory and Komagane Factory attain zero CO2 emissions
	September	Yokogawa publishes Yokogawa Group Sustainability Report 2006
	October	Yokogawa introduces the Green Power Certification System (300,000kwh) The Kanazawa Office receives the New Office Promotion Award, Environment Award and Good Design Award for architectural design
2007	June	Yokogawa publishes Yokogawa Group Corporate Social Responsibility Report 2006
	September	Yokogawa Group establishes the Energy Conservation and Environment Protection Solution Division in order to promote environmental management solutions to customers
2008	June	Yokogawa publishes Yokogawa Group Corporate Social Responsibility Report 2007
2009	May	Yokogawa completely abolishes the usage of HCFC
	June	Yokogawa publishes Environmental Report 2009 on its website.
	October	The Kofu Office receives "Green IT Award 2009 Minister of Economy, Trade and Industry Award" for its energy-saving activities
2010	February	The ESCO business receives the 2009 Energy Conservation Grand Prize
	September	Yokogawa established the "Yokogawa Group Green Promotion Committee" with the aim of stepping up group-wide efforts to conserve the global environment and prevent climate change.

Yokogawa actively develops environmentally friendly products through the implementation of its own strict standards of design and assessment for long-term usability, energy-saving performance and other aspects. New products are evaluated for energy consumption as well as the emission of carbon dioxide (CO₂), nitrogen oxide (NO_x) and sulfur oxide (SO_x) based on our "Lifecycle Assessment (LCA) standards".

Some of the evaluated products are LCA-labeled, and the LCA results are disclosed. Products carrying the LCA label provide outstanding environmental features that meet various standards and help customers reduce the environmental burden.

■ Guidelines for Environmentally Friendly Design



LCA Label

(1) Environmental Assessment Standards for Product Design

We have established assessment standards in eight areas: ease of recycling and treatment, resource conservation, energy conservation, long-term usability, ease of collection and transport, safety and environmental protectiveness, information disclosure, and packaging. These standards are used in conducting assessments during each inspection (initial design, intermediate design, and final design).

(2) Lifecycle Assessment (LCA) Standards

The LCA standards are used for preliminary assessments of energy use, CO₂ emissions, NO_x emissions, SO_x emissions, and the like throughout the lifecycle of a product. These standards are used in conducting assessments during each inspection (initial design, intermediary design, and final design).

(3) Environmentally Friendly Product Design Guidelines

These guidelines establish design and machining and assembly methods that incorporate long-life design, energy conservation design, resource conservation design, and materials and parts selection guidelines, as well as standards for the recycling and disposal of products.

(4) Standards on Toxic Substances in Products

These standards guide the selection of environmentally friendly parts and materials in the design stage. The standards stipulate the elimination or reduction of substances a total of 44 substance groups: 15 prohibited substance groups and 14 voluntarily controlled substance groups specified in the Green Procurement Study Standardization Guidelines, and substances in 15 voluntarily controlled substance groups nominated by the Group.

(5) Recycled Product Design Standards

These standards encourage the three Rs: the reduction of waste and the reuse and recycling of used products.

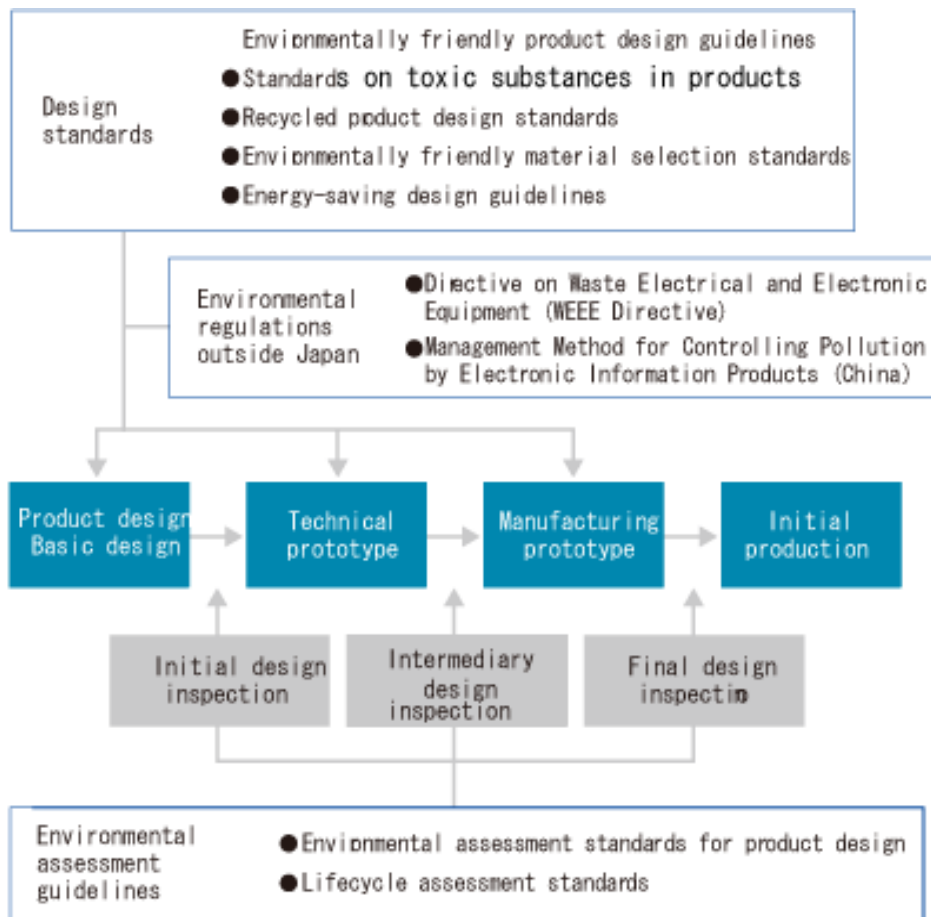
(6) Environmentally Friendly Material Selection Standards

These standards state that the use of halogen-based flame retardants is to be avoided. The standardized specifications of materials also state that the use of structural steel plates containing hexavalent chromium is to be avoided and assign chrome-free steel plates as a substitute.

(7) Energy-saving Design Guidelines

These guidelines state that energy is to be conserved in the manufacturing and product use stages. They introduce energy conservation design technologies for products and manufacturing.

Environmentally Friendly Design and Assessment Standards



Environmental Assessment Standards for Product Design

(1) When	initial design inspection/intermediate design inspection/ final design inspection
(2) Assessment items	Twenty-nine items in eight fields; ease of recycling and treatment, resource conservation, energy conservation, long-term usability, ease of collection and transport, safety and environmental protectiveness, information disclosure, and packaging.
(3) Evaluation criteria	Score is zero points if legal regulations are not satisfied, four points if legal regulations are satisfied and an improvement of 30% or more is achieved, three points for an improvement of 15% or more, two points for an improvement of 5% or more, and one point for an improvement of less than 5%.
(4) Pass/fail judgment criteria	In order to pass, there must be no assessment items with a score of zero points, and the total score must be greater than that of the old model. A “failed” judgment is given if any of the assessment items has a score of zero points or if the total score is the same as or lower than that of the old model. The improvement guidelines target an improvement of 25% or more, and more than anything seek to incorporate environmental-burden reduction into design.

Yokogawa began to conduct the life cycle assessment (LCA) in 1999 in the design phase of all new products as part of efforts to minimize our products' environmental impact. Some of the results of the LCA are disclosed on our website. When LCA data is disclosed for a product, the applicable product is "LCA-labeled" in the product webpage and/or sales brochure.



Reference

The "Environmentally Friendly" label will be attached to our products that meet Yokogawa's environmental assessment standards for product design and that are designed with greater environmental consideration than our previous products or those of competitors.

⇒ Environmentally Friendly Products

Requirements for LCA Labeling

A product will be LCA-labeled if it meets all the requirements described below:

1. Life cycle assessment has been conducted according to Yokogawa's engineering specifications.
2. The results of life cycle assessment are disclosed on the Yokogawa website according to the company's internal rules.

Concept/Implementation of the LCA

Yokogawa has set its unique LCA standards based on JIS Q 14040 "Environmental management -- Life cycle assessment -- Principles and framework." We compare a new product with its previous product for assessment purposes. The results of the LCA of the previous product are multiplied by the "functional factor" to compare the environmental impacts based on the equivalent functionality of the new product. When the results of the LCA on the previous products clearly suggest how these products would impact the environment, we may only conduct LCA on the elements significantly affecting the environmental impact.

List of LCA-Labeled Products

Model	Products	LCA result
CENTUM CS3000 Model System	Integrated Production Control System	PDF:419KB
Prosafe-RS Model System	Safety Instrumented System	PDF:192KB
STARDOM Model System	Network-based Control Systems	PDF:263KB
EJA110E	Pressure Transmitter (DPharp EJA-E Series)	PDF:157KB
CSU-X1	Confocal scanner unit	PDF:212KB
AQ 1200A/B/C	AQ1200 MFT-OTDR Optical Time Domain Reflector Go to another page in a new window	PDF:167KB

Yokogawa has always been an active contributor to the improvement of production efficiency in regard to measurement, control and information. These efforts have allowed us to reduce cost while cutting CO2 emissions by saving energy.

Thus Yokogawa develop and provide solutions to further enhance the energy saving in a more effective way based on the experience and know-how accumulated over many years.

In the areas of environment and new energy, we are providing a wide range of solutions by utilizing our expertise, such as the monitor control, safety instrumentation, and the technology to digitalize field instrument by wireless communication sensor.

Yokogawa control technologies contribute to efficient use of renewable energy

Yokogawa is also working to expand its presence in the renewable energy field. The Group already has an extensive track record in biomass, a market segment deemed to have strong growth potential, and in recent years has supplied control systems for numerous other projects, including a large wind-power installation in China and a solar energy project in Australia. In fiscal year 2011, the Group also won orders to replace control systems at a number of geothermal power installations in Southeast Asia. Yokogawa's control technologies are garnering attention worldwide for their contribution to the stable supply of non-oil energy sources.

Yokogawa's solutions contribute to effective utilization of water resources

In many regions in the world, water shortages are a major problem. In such countries, it is particularly important to prevent water losses resulting from equipment malfunctions and breakages in the water supply system, while with sewage facilities the challenge is for the development of infrastructure to keep pace with rapid urbanization. It is here that Yokogawa's measurement and control technologies come into play. Our water-related technologies and expertise are employed worldwide in monitoring systems and water-flow control systems. Yokogawa is also a member of the Global Water Recycling and Reuse System Association, Japan, a group comprising 50 Japanese companies involved in the water business. As a major player in Japan's water industry, the Group is actively collaborating with government and academia to promote the international use of water recycling systems developed in Japan.

⇒ Contributing to Vital Water Resources

Goals and Achievements in Fiscal Year 2011

Environmental Policy of the Yokogawa Group	Fiscal Year 2011 (main sites)		Self Evaluation
	Target/Goal	Results	
EMS establishment, maintenance, and improvement	Confirm and achieve at least 110 themes for the environmental conservation action targets that are closely integrated with our business practices. *1	<ul style="list-style-type: none"> • 156 themes closely integrated with business operations • An internal audits conducted and effective environmental system confirmed 	Good
	Promote 44 useful environmental activities in line with existing business.*2	44 useful environmental activities promoted	
Implementation of environmental education	<ul style="list-style-type: none"> • Provide all employees with basic environmental education that can be applied to activities undertaken on their own initiative.*3 • Provide specialized environmental education to those who are engaged in business activities that have a particularly significant impact on the environment.*3 	100% achieved	Good
Legal compliance	Continue with the preventive maintenance and management of wastewater treatment facilities. *2	Reviewed emergency training and procedures.	Good
	Develop ways to implement self-management pertaining to wastewater. *2	Compiled management standards (ideas on preventive maintenance) applicable to the entire company and adjusted specific management methods.	
	Conduct compliance audit on an as-needed basis to ensure compliance. *2	<ul style="list-style-type: none"> • Completed corrective measures and reviewed management methods for noncompliant items • Conducted mutual audits by expert members. 	
Promotion of resource recycling-based management	Reduce energy consumption and CO2 emissions (domestic group companies). <ul style="list-style-type: none"> • Total CO2 emissions: 52,601 t-CO2/year (Reduce emissions by 7% from the average of reference years from 2005 to 2007.) 	Reduced energy consumption and CO2 emissions (domestic group companies). <ul style="list-style-type: none"> • Total CO2 emissions: 42,044 t-CO2/year 	Good
	Reduce total waste <ul style="list-style-type: none"> • by 22 % compared to fiscal year 2003 (585 t/year in total generation)*1 • Reduced to 3,368 t/year*2 	Reduce total waste <ul style="list-style-type: none"> • 26% reduction compared to fiscal year 2003 (559 t/year in total generation) • Reduced to 3,223 t/year 	Good
	Resource saving Deploy green production lines and make improvements at 6 lines*2	Resource saving Achieved resource-saving improvements, including on manufacturing lines and for equipment, at 6 lines (Reduced waste solution, power consumption, etc.)	Good

Environmental Policy of the Yokogawa Group	Fiscal Year 2011 (main sites)		Self Evaluation
	Target/Goal	Results	
Minimization of environmental pollutants	Collect information from the industry and other companies through external committee meetings, etc.*1	Information collected by attending external committee meetings	Good
	Reduce toluene and xylene by 2,000 kg.*2	2,517 kg reduction	
	Promote lead-free soldering and achieve 100% application in planned products.*22	Application to all planned products achieved	
Development of environmentally friendly products	Apply the assessment standards to reduce CO2 emissions of developed products by more than 25%. *1	Registered 11 product models to which the assessment standards are applied, and conducted their design reviews according to the respective schedules.	Good
	<ul style="list-style-type: none"> Promote green procurement for parts. *2 	<ul style="list-style-type: none"> Implemented five cases of green procurement, including the introduction of returnable tote boxes. 	
Development of environmentally friendly products	<ul style="list-style-type: none"> Increase sales of environmentally friendly products*1 Show visitors energy-saving efforts at the Kofu Factory*1 	Achieved	Good
Contribution to society through environmental conservation	Promote contributions to society through participation in nature conservation and social and community activities.*1	Participated in community clean-up activities and "Lights Off" campaign, etc.	Good
	Carry out at least 16 social contribution activities.	A total of 19 social contribution activities carried out	
Disclosure of environmental conservation information	Promote information disclosure and enhance efforts to communicate with communities.*1	Published CSR report, Web edition	Good
	Improve the corporate website and intranet.	Updated information posted on the corporate website and intranet.	

Main sites: Yokogawa Electric Corporation Headquarters & Main Factory and Yokogawa Manufacturing Corporation

*1: Goals of Yokogawa Electric Corporation Headquarters & Main Factory

*2: Yokogawa Manufacturing Corporation

*3: Common goals

Yokogawa is doing everything possible to switch to alternative technologies to ensure full compliance with the laws, agreements and regulations designed to prevent environmental pollution and reduce substances that place a burden on the environment. In 2011 we again endeavored to ensure full compliance with the environmental laws, regulations, agreements, etc., and had no major violations. Each year we regularly receive inspections by external auditors and internal audits.

Reduced Risk of Air and Soil Pollution

- Yokogawa Denshikiki Hadano Factory -

The factory, which formerly operated heavy-oil boilers for air-conditioning certain areas, has introduced high-efficiency air-conditioning units and shifted its energy source from heavy oil to electricity as part of its building refurbishment.

The factory is now free from the sulfur oxides (SOx) and nitrogen oxide (NOx) that are otherwise released to the air from stacks of boilers burning heavy oil. The associated risk of air pollution has thus been eliminated. Moreover, because tanks are no longer needed for the storage of heavy oil, the corresponding risk of soil pollution has been eliminated as well.

The above measures have also contributed to greater energy-efficiency, with CO2 emissions dropping by approximately 10% from the previous year's level.

Conserving Water and Soil

The Yokogawa Group has conducted soil and water studies at former production sites in accordance with its proprietary control standards, starting before the enactment of Japan's Soil Contamination Countermeasures Law. The Group will continue to comply with the revised Soil Contamination Countermeasures Law put in effect in April 2010.

Environmental Auditing

Internal Audits

The environmental internal audits for ISO14001 consist of systems, legal compliance, and performance audits. Internal audits were conducted at all departments at least once during the year. Although some inconsistencies and items to be watched were identified, these were quickly addressed and corrected.

Internal Audit Inspection Items

Systems audit	Audit of organizations/systems, target management, education, operations management/corrections, and other data to check whether the system is functioning effectively
Legal compliance audit	Audit of the operation and monitoring of regulated values (qualifications, notice submissions, and measurement data) and other data to check whether legal and other requirements are being followed
Performance audit	Audit of targets and actual results, regulated values, and other data to check whether the self-determined operation items are being implemented properly

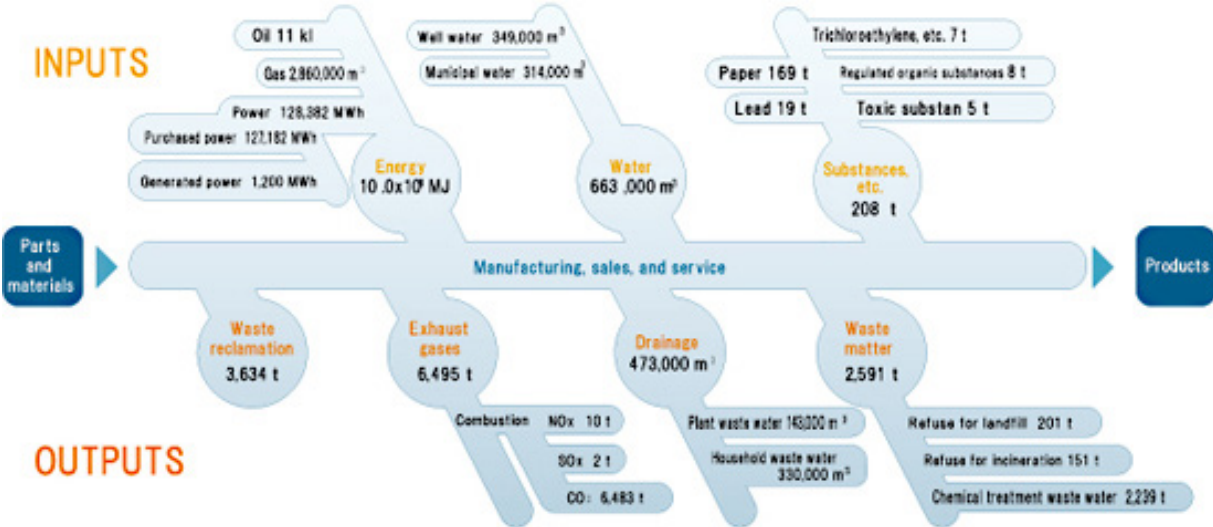
Annual Surveillance

Regular inspections (renewal inspection or surveillance) were conducted at each of Yokogawa's ISO14001-certified group companies by an ISO14001 certifying organization in order to maintain ISO14001 certification.

Environmental Impact

The Yokogawa Group calculates the annual volume of the energy and material inputs for its business activities (including manufacturing, sales, and service) as well as their annual output of waste and other matter into the air and water. This analysis helps the Group effectively use resources, improve energy efficiency, and improve the waste recycling rate.

Overview of Environmental Impact



In accordance with the Ministry of the Environment's **Environmental Accounting Guidelines** (2005 edition), Yokogawa calculates the costs of its environmental activities and quantifies their economic impact.

Environmental Conservation Costs

(Millions of yen)

Category	Item	Main Initiatives	Capital Investment	Related Costs
Costs for reducing environmental impact of factories (areas of operation)	Pollution prevention costs	Monitoring and measurement	10.3	132.8
	Global environmental conservation costs	Energy savings	57.5	136.7
	Resource recycling costs	Minimize generation of waste matter	1.4	172.4
Costs for reducing environmental impact of procurement and logistics		Green procurement	0	6.2
Environmental conservation costs in EMS activities		EMS updates, education	0	167.8
Environmental conservation costs in community activities		Environmental events	0	23.1
Costs for correcting damage to the environment		Soil recovery	0	0
Total			69.2	639.0

Environmental Conservation Effects

Category	Description of Effect (unit)	FY2010	FY2011	Effect
Resource expenditure	Total amount of energy consumed (10 ⁸ MJ)	11	10	-1
	Total amount of water resources consumed (km ³)	707	663	-44
Global warming prevention	CO2 emissions (t)	7,896	6,483	-1,413
	CO2 emissions on unit sales (t-CO2/100 million yen)	3.3	2.8	-0.5
Air pollution	NOx emissions (t)	15	10	-5
	SOx emissions (t)	3	2	-1

Economic Effects of Environmental Conservation Measures — Intrinsic Effect

(Millions of yen)

Description of Effect	Amount
Reduction in expenditure due to recycling (sale of valuable resources, etc.)	71.4
Reduction in expenditures due to energy savings (power, etc.)	16.8
Reduction in expenditures due to resource savings (reduced use of paper and water, etc.)	5.4
Total	93.6

* Data was taken from ISO14001-certified manufacturing sites.

Yokogawa is working to improve its production lines by reducing the environmental burden generated by each line. We are reducing the use of substances that cause air, water and soil pollution and are cutting CO2 emissions through the use of electricity to preserve the environment while reducing costs.

Power Savings of Hermetic Body Processing Lines

Yokogawa Manufacturing Kofu Factory

Our Kofu Factory has improved its "hermetic body processing lines," which are used to manufacture sensor parts for differential pressure transmitters/pressure transmitters.

The hermetic body processing lines have steps to drill several holes (approximately 2 cm in diameter) into parts. Formerly, seven processing machines were used for this. However, as production volumes increased the factory found it urgently necessary to improve its work efficiency. Various concepts were investigated.

Eventually, the factory has introduced a new, center-through processing machine designed to supply cutting oil from the tip of the drill, thereby reducing the processing time substantially and eliminating four of the conventional processing machines. Another improvement is to bring all the processing machines together in one location instead of using two different locations, and thereby achieve a linear flow through the manufacturing process. The resulting improvement in work efficiency, and the elimination of four conventional processing machines, is projected to save approximately 135 Mwh of electricity each year.

Comments from Persons in Charge

An increase in the number of conventional processing machines to meet higher production volumes would present problems in terms of power consumption, installation space, etc.

We have identified the cycle-time bottlenecks in the processing steps and therefore introduced a new processing machine for the improvement of work efficiency. Consequently, through the readjustment of tasks the overall efficiency has improved.

We are now implementing the next step in our program of improvement activities. We're extremely eager to see the results!



Shinsaku Hayashi,
Manufacturing Engineering
Division Technology Elements Dept.
Yokogawa Manufacturing

Improvement of Plasma Spray Process to Save Energy

Yokogawa Manufacturing Kofu Factory

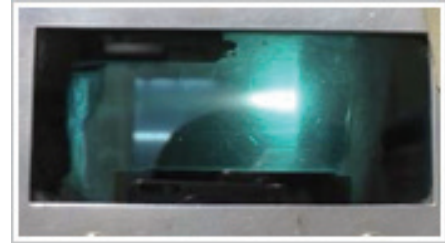
The manufacture of electrode sensors for gas analyzers requires a plasma spray process.

As part of the plasma spray process, 730 to 950 A of power is used to generate plasma in argon gas. This plasma is used to melt platinum or aluminum at super-high temperatures of approximately 10,000°C, and the molten metal is then sprayed onto the sensor.

Our plasma spraying facility, which has demonstrated results, has been in use for many years. However, the aging facility began to break down more often, consuming more power and material due to the need for reworking.

Consequently, in order to improve the situation we conducted an in-depth study of facility maintenance points to ensure proper maintenance and management. We also established new sensor installation conditions and introduced newly developed jigs, thus returning the facility to stable operation.

We have also improved the inspection system in the subsequent process. Formerly, paper reports were once printed out in order to check the work quality and save quality data, but instead we developed software that would allow work quality data to be processed and saved via a PC screen, thus achieving greater efficiency.



Plasma spraying

Comments from Persons in Charge

This is an important process in the manufacture of high-performance, high-durability products, where it's essential for the time-proven facility to demonstrate the level of performance for which it was designed.

Because one plasma spray shot uses large amounts of electricity and material--such as platinum or aluminum--the latest improvement has allowed us to achieve substantially higher yield and work efficiency. We will work on further improvement by examining the possibility of a facility update.



Kiyoshi Nagai, Kenji Shinohara,
Manufacturing Engineering
Division Manufacturing Engineering Dept.
Yokogawa Manufacturing

Effective Utilization of Sheet-Metal Processing Materials

Yokogawa Manufacturing Komine Factory

Sheet-metal processing involves steps to punch out parts from iron, aluminum, stainless steel and other sheets using press machines and other systems.

Our Komine Factory is working to improve the yield in day-to-day operations as a means to help conserve the environment. In these steps, multiple types of parts must be arranged on a single sheet and punched out in an efficient manner. For the efficient use of material in producing parts for the same product, off-cuts that were formerly scrapped before are now used to punch out different parts. Also, parts for different products can be combined for the most economical use of material, in order to reduce material purchases and waste byproduct.

These activities have led to (annual) savings of approximately 450,000 yen in the purchase cost of iron and stainless materials, or about 590 iron and stainless sheets (1m x 1m x 1mm thick) combined, weighing a total of approximately 3,800 kg.

Comments from Persons in Charge

Improvement of yield means less inefficiencies and effective resource utilization, so we set targets and drive improvement activities to achieve them one by one.

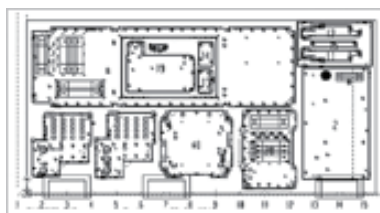
Instead of relying on software to assign machine jobs, we constantly check things in order to find and improve inefficiencies. We will continue to apply our sheet-metal processing know-how to propose ideas to engineering departments and help them achieve improvements.



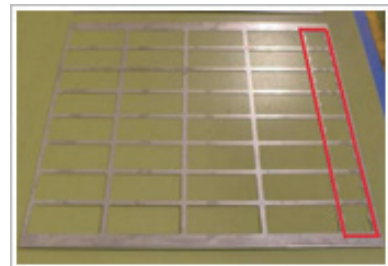
Toyohiko Hamada,
Komine Factory Parts & Components
Machining Dept. Plate Metal Sec.
Yokogawa Manufacturing



Different parts are punched out from off-cuts.



Spaces between parts are minimized.



Parts for different products are arranged together on one sheet.

To make effective use of water--a limited resource--the Yokogawa Group is working to conserve water through its business activities, such as using water effectively in manufacturing processes and providing products designed to help customers save water too.

Reduction of Water Usage by Dishwashers through Adoption of Unique Drainage Systems

Yokogawa Denshikiki Co., Ltd.

Yokogawa Denshikiki develops and manufactures various industrial dishwashers as part of its kitchen segment.

The company's dishwashers, designed to make kitchens more efficient and labor-efficient, are in use at many family restaurants, Japanese-style bars and other eating establishment, as well as in daycare centers and special nursing homes for the aged.

Dishwashers wash dishes hygienically using hot water in a manner that ensures efficiency and uniform finishing, while achieving substantial savings on water and detergent as well as the gas and electricity used to boil water.

In 2011 the company delivered approximately 1,200 dishwashers, thereby helping customers improve their efficiency and save resources.

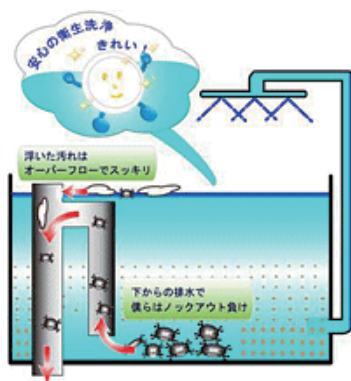
Dishwashers have traditionally used the "overflow system" of draining water through the upper chamber in the cleaning tank. However, this method is problematic in that contaminants in the lower chamber aren't readily discharged and repeated-cleaning operations reduce the cleaning effect. To solve these problems, Yokogawa Denshikiki independently developed new draining methods, including the "Lead Cleaning System," which is designed to promote the replacement of cleaning water and rinsing water; and the "Direct Cleaning System," which forcibly drains water from the bottom of the cleaning tank.

Yokogawa Denshikiki will continue to provide products that achieve greater efficiency and labor savings while ensuring food safety and helping to conserve the environment.

■ Independently Developed Draining Methods

-Lead Cleaning System-

Contaminants collected in the bottom of the cleaning tank are discharged through the lead pipe. Additionally, water for rinsing is supplied to keep the cleaning water free of contaminants, so the cleaning effect lasts longer.



Conceptual drawing of the lead cleaning system



SMART A500E industrial dishwasher adopting the lead cleaning method

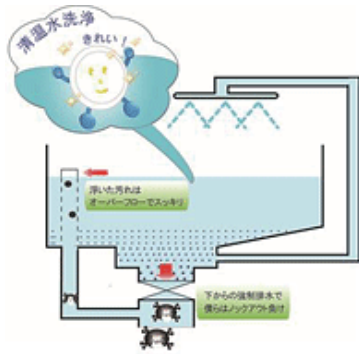
<Environmentally friendly features>

- It uses 30% less water in the cleaning tank (40 liters ⇒ 27 liters compared to a conventional unit of similar capacity).
- The SMART A500E is designed according to environmental assessment, so it uses 5% fewer fastening parts and requires 20% less assembly time than a conventional unit of similar capacity.
- It boasts a minimal footprint (60 cm x 60 cm).

-Direct Cleaning System-

Contaminants collected in the bottom layer of the cleaning tank are forcibly discharged from the bottom of the tank.

Contaminants in the bottom layer are discharged all at once from the bottom of the cleaning tank, so warm water becomes maximally clear and the cleaning effect lasts longer.



Conceptual drawing of the direct cleaning system



I550 industrial dishwasher adopting the direct cleaning method

<Environmentally friendly features>

- IDishes are cleaned with clear, warm water.
- Detergent can be reduced by 50% (compared to a conventional unit of similar capacity).
- Cleaning tank capacity of 18 L (lowest filling requirement in Japan).

Effective Usage in Manufacturing Processes Requiring Ultrapure Water

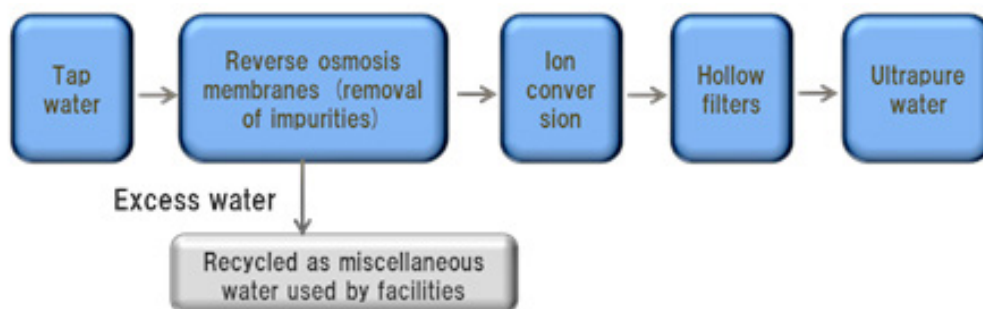
Yokogawa Electric Sagamihara Factory

Our Sagamihara Factory strives to economize on the use of water in semiconductor manufacturing processes.

Semiconductor manufacturing processes use ultrapure water--which is very high in purity and free from organic substances, minerals and other contaminants--for the cleaning of semiconductor wafers. Ultrapure water is produced from tap water using several steps. Formerly, the factory consumed approximately 88,000m³ of water each year.

The Water Treatment Committee, an expert committee established by the factory, examined ways to use water effectively. It was able to save approximately 12,000m³ of water a year by recycling the excess water generated from the ultrapure water production process, specifically the water that is discharged when impurities are removed from tap water, as cold-source makeup water, boiler makeup water and miscellaneous water used by other facilities.

■ Outline of Ultrapure Water Production Process



The "Yokogawa Group Green Promotion Committee" was formed to step up our efforts to preserve the global environment and enhance our programs to counter global warming. We have set CO2 emission reduction targets for the Yokogawa Group (Japan) for the phases 2010-2014, 2015-2019 and 2020, and are implementing emission reduction programs to achieve those targets. Our ongoing CO2 emission reduction programs include the introduction of high-efficiency heating/cooling equipment, the installation of inverter-driven lights, and the use of green power. For our offices and factories, we have employed "InfoEnergy," Yokogawa's proprietary energy conservation support system designed to visualize energy data, in order to reduce CO2 emissions.

CO2 Emission Reduction Targets and Performance for Yokogawa Group (Japan)

The Yokogawa Group (Japan) has set its CO2 emission reduction targets toward 2020, and is directing its efforts to achieve the targets.

By using the annual average of emissions measured over the 2005 to 2007 period as the baseline (56,560 tons of CO2), we have set different reduction targets for three phases with the ultimate objective of achieving the goal set for 2020.

Specifically, we are implementing a range of activities to achieve the reduction targets described below:

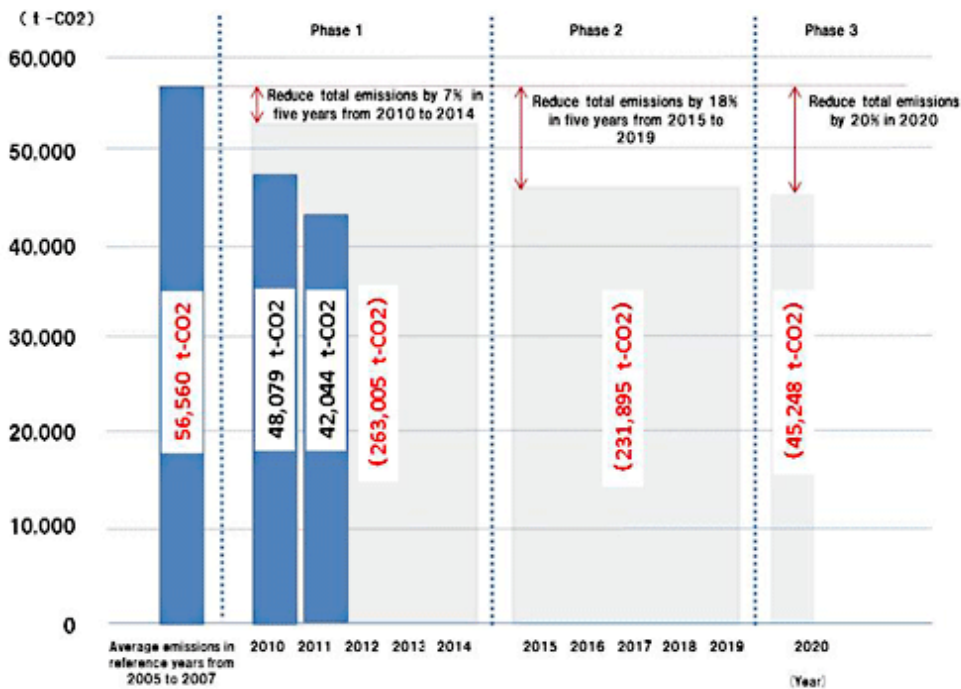
2010 to 2014 period: A 7% reduction in total emissions (263,005 tons of CO2, with an annual average of 52,601 tons of CO2)

2015 to 2019 period: An 18% reduction in total emissions (231,895 tons of CO2, with an annual average of 46,379 tons of CO2)

2020: 20% reduction (45,248 tons of CO2)

In 2011, the Yokogawa Group (Japan) achieved its reduction target with CO2 emissions amounting to 42,044 tons of CO2.

Graph of CO2 Emission Reduction Targets and Performance for Yokogawa Group (Japan)



CO2 Reduction Program through "Electricity Data Visualization" with the Use of "InfoEnergy" Energy Conservation Support System

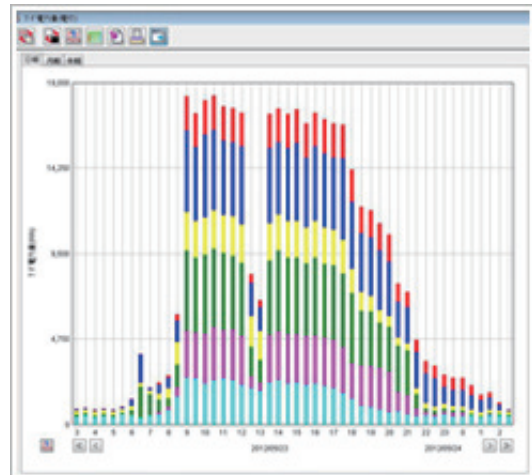
Yokogawa Electric

We have been promoting the visualization of electricity use within the premises of Yokogawa's headquarters since 2010 by installing new and additional units of our proprietary "InfoEnergy" energy conservation support system.

In 2012 we initiated the management of "InfoEnergy" data by dividing it into smaller categories--buildings, floors and electrical systems--in an effort to further reduce power consumption. Specifically, an Energy Conservation Coordinator appointed for each of the buildings and floors monitors the electricity consumption in the area under his/her charge in order to discern any improper use of electricity. Any unnecessary or excessive usage is eliminated through corrective measure(s) designed to accommodate the work performed on the applicable floor and the requirements of the equipment being used, as part of our proactive effort to reduce energy consumption.



"InfoEnergy" Monitor



"InfoEnergy" Screen

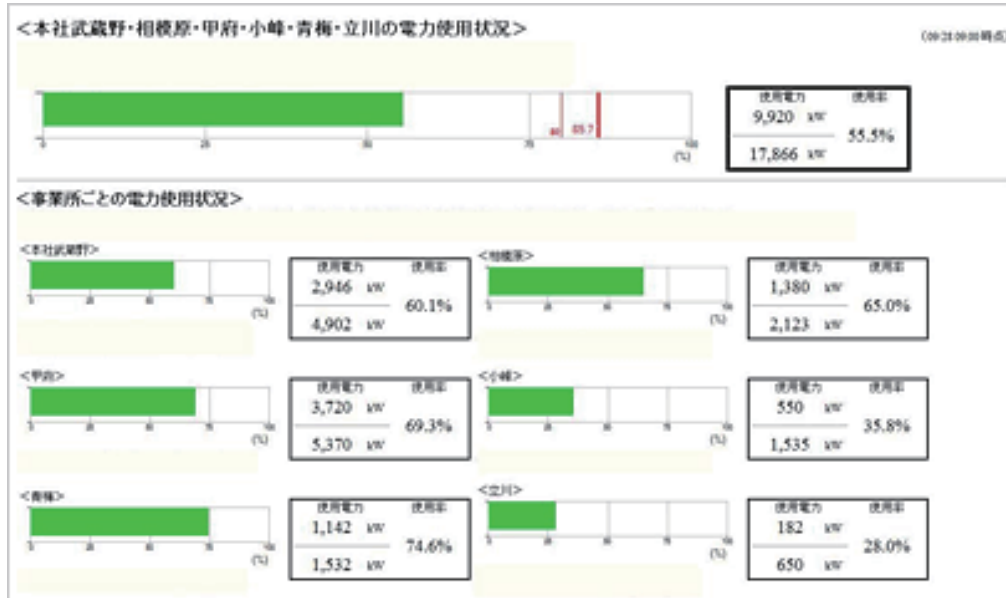
This screen allows us to monitor the hourly electricity consumption per electrical systems such as lighting and air conditioning.

Last Summer's (2011) Power Conservation Measures

Yokogawa Manufacturing

As part of the electricity supply and demand strategies we implemented during the summer of 2011 in response to the imposed "Restriction of Electricity Use Based on Article 27 of the Electricity Business Act," we changed our working conditions and calendar and stepped up the ongoing energy conservation efforts. At the respective factories and offices, we ran the air conditioners and production equipment in energy-efficient mode, limited the use of elevators, turned on fewer lights than usual and switched off lights when they weren't needed. Furthermore, we raised employee awareness about power conservation by monitoring and visualizing the power usage status for each factory. As a result of these efforts, during the summer of 2011 the six offices (factories) that participated in the Scheme for Joint Restriction of Electricity Use (our headquarters in Musashino and other factories in Sagami-hara, Kofu, Komine, Oume and Tachikawa) achieved an overall reduction of 28.2% in peak electricity usage from the 2010 baseline. The total electricity usage for the 2011 summer season was cut down by 16.6% from the 2010 level.

Electricity Usage Screen



Increasing Air Conditioner Efficiency for Clean Rooms

Yokogawa Electric, Sagamihara Site

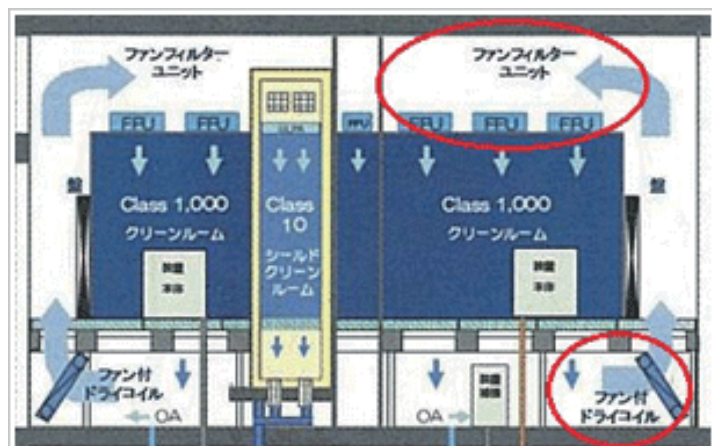
The air conditioner for the semiconductor manufacturing clean room needs to run 24 hours a day, 365 days a year, and cleanliness must be carefully controlled and monitored. We were able to significantly cut down on power by properly running the fan filter units (FFUs) and dry coil units (DCUs), which are equipment for the clean room air conditioner.

The FFUs are mainly installed in the upper area of the clean room in order to blow clean air into the clean room. We used to run the FFUs in the third to seventh gears according to the cleanliness set for the clean room. The first power saving measure we took was the introduction of a programmed operation system, through which we've made some improvements such as reducing the FFU speed on non-working days and during overnight hours when the clean room is not in use. Moreover, when we took additional measures to save more energy during the summer months, we were able to confirm that the cleanliness of the clean room could be maintained even if all FFUs were brought down to first gear during the hours in which the clean room was not used on non-working days.

The DCU cools down the heat generated in the clean room and circulates the air. We used to run DCUs at a fan speed of 50 Hz (frequency). However, through the careful calculation of heat-source loads in the clean room, we were able to reduce the speed to 30 Hz and still maintain the same indoor environment.

These efforts toward improvement have resulted in an annual reduction of approximately 530 MWh (202 tons of CO₂).

FFU (fan filter unit) and DCU (dry coil unit) Layout



We began our activities in keeping with the cost reduction theme, but we had already done nearly all we could to increase the efficiency of boilers, freezers and other factory equipment. So, to further increase the efficiency we needed to deal with the equipment directly related to production.

I used to develop and manufacture products in the clean room. When I studied the cleanliness data that was available, I thought we could perhaps maintain the same cleanliness even if we lowered the equipment speed a bit more. During the summer months, when we took additional measures to save more energy, we had a chance to lower the equipment speed to the limit. Even with such a speed we were still able to keep the appropriate power and maintain the clean room environment.



Takayuki Usuda,
Semiconductor Headquarters
Admin Dept. Yokogawa Electric

Implementing Energy-saving Lights

Yokogawa companies outside Japan are also implementing efforts to reduce CO2 emissions. Yokogawa Australia and New Zealand has reduced its CO2 emissions by reducing fuel consumption through converting sales fleet to petrol efficient vehicles; installing energy wise lighting throughout offices; utilizing heat reflecting blinds to reduce energy intake; and recycling paper and printer cartridges. Yokogawa Corporation of America (YCA) has replaced all of the 115 lights used in the manufacturing area of its factory with energy-saving ones. YCA has reduced the power consumption of the lighting by replacing the 400-watt metal halide lamps it formerly used with 135-watt LED lights. Because the LED light generates less heat, it also helps reduce the power used for air conditioning.



LED lights at YCA factory

The light at the top of the picture is a 135 watt LED fixture. The light at the bottom of the picture is the old metal halide 400 watt fixture.

Lecture on "Improving Factory Energy Conservation Directly Linked to Environmental Management"

Yokogawa Manufacturing, Kofu Factory

Employees representing Yokogawa Manufacturing Kofu Factory participated in the "Industrial Innovation Conference 2012" held by the Japan Management Association and gave a lecture on "Improving Factory Energy Conservation Directly Linked to Environmental Management." The lecturer introduced Kofu Factory's energy conservation activities, specifically the foundation built during the 1990s for environmental and energy conservation activities; the effort made during the 2000s to visualize environmental data; and the ongoing energy conservation activities and employee-driven improvements, which are linked to the current corporate objectives.

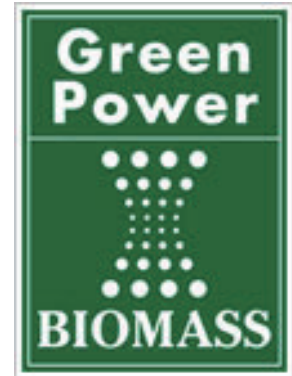


Lecture at Industrial Innovation
Conference 2012

Introduction of the "Green Power Certificate" System

Yokogawa Electric

A portion of the electricity used by the headquarters building of Yokogawa Electric come from "Green Power" harnessed through "biomass power generation"(300,000 kWh/year).



Biomass power generation

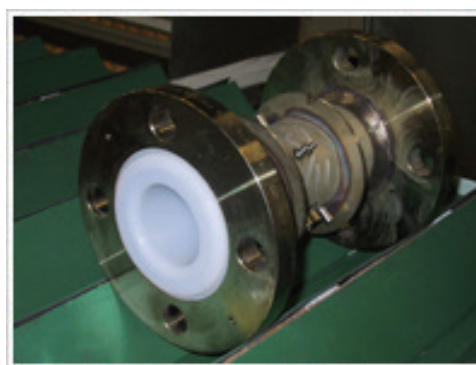
Yokogawa strictly manages chemicals that are harmful to the global environment and the human body. Furthermore, to comply with RoHS directives restricting the use of certain chemicals in electrical and electronic equipment in Europe, as well as with the REACH Regulation (Registration, Evaluation, Authorization and restriction of CHemical substances), we are implementing efforts for the reduction and management of such chemical substances.

Changing a Chemical in the Mold Release Agent

Yokogawa Manufacturing Kofu Factory

In the process of molding an electromagnetic flowmeter, a mold release agent is used to neatly remove the Teflon component from the mold. Formerly, we used a chemical containing n-hexane for the release agent (spray). N-hexane has long been used in Japan because its use for industrial products is not regulated in the country. However, following our transfer of the relevant production to a factory in Suzhou, China, the Suzhou government enacted a regulation on the use of n-hexane, with which we had to comply.

We received a request from the Suzhou factory to replace n-hexane with another chemical for use in the mold release agent, and have studied possible alternatives. The previously used release agent was a custom-made product. Therefore, we worked in cooperation with the supplier of the release agent and made the necessary adjustment. We have significantly reduced the amount of n-hexane used in the release agent by using isohexane as the alternative.



Electromagnetic Flowmeter

PRTR Substances

The amount of substances reported under PRTR* requirements (1,000 kg/year or more handled) is shown in the table.

*PRTR System: PRTR SYSTEM...The PRTR, or Pollutant Release and Transfer Register, was established to enable society as a whole to manage chemical substances through the disclosure of toxic chemical emissions data and other information.

Fiscal Year 2011 PRTR Data

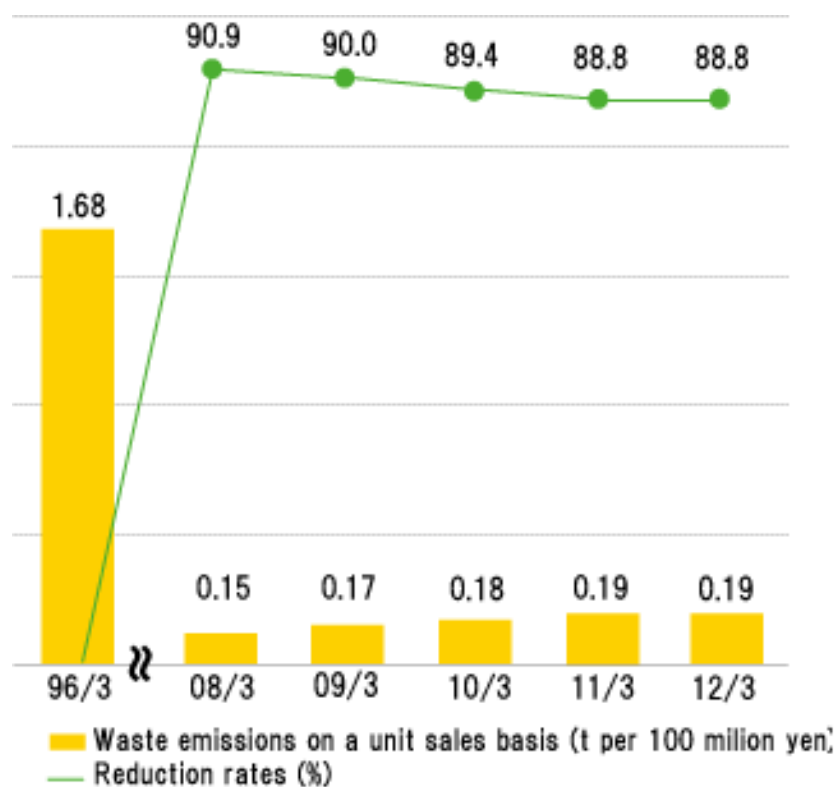
Factory	Factory substance	Amount used (kg)	Amount emitted (kg)				Amount transferred (kg)	
			Air	Public water area	Soil	Land fill	Sewage system	Outside site
Yokogawa Electric Sagamihara Factory	Ferric chloride	1,106	0	0	0	0	0	0
Yokogawa Electric Komagane Factory	Hydrazine	1,853	0	240	0	0	0	1,600
	Hydrogen fluoride and its water-soluble salt	1,491	0	140	0	0	0	1,300
	Ferric chloride	2,437	0	0	0	0	10	0
	Xylene	1,114	400	0	0	0	0	710
Yokogawa Manufacturing Kofu Factory	Toluene	1,510	1,400	0	0	0	0	150
	Lead	2,773	0	0	0	0	0	0
Yokogawa Manufacturing Komine Factory	Xylene	1,266	790	0	0	0	0	480
	Toluene	1,779	1,100	0	0	0	0	680
Yokogawa Manufacturing Ome Factory	Ferric Chloride	5,095	0	0	0	0	0	0
	Water-soluble copper salt (except complex salts)	11,338	0	0	0	0	18	9,100
	1,3,5-Tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6-trione (1H,3H,5H)-trione	1,789	0	0	0	0	14	1,100
	Formaldehyde	1,929	330	0	0	0	10	1,300

The "3R" concept (Reduction, Reuse, and Recycling) promoted by the Yokogawa Group is indispensable to global environmental conservation. The Yokogawa Group defines zero emissions as recycling and reusing 99% or more of the total amount of waste generated. Up to now, six main factories including the Yokogawa Electric's headquarters have met the goals of zero emissions.

Unit-sales-basis Waste Emissions and Reduction Rates (Compared to Fiscal year 1995)

The waste emissions in fiscal year 2011 amounted to 0.19 t per 100 million yen on a unit sales basis (627 tons in total), and its reduction rate was 88.8% (compared to Fiscal year 1995)

Unit-sales-basis Waste Emissions and Reduction Rates (compared to Fiscal year 1995)



In-House Treatment of Waste Plating Solution

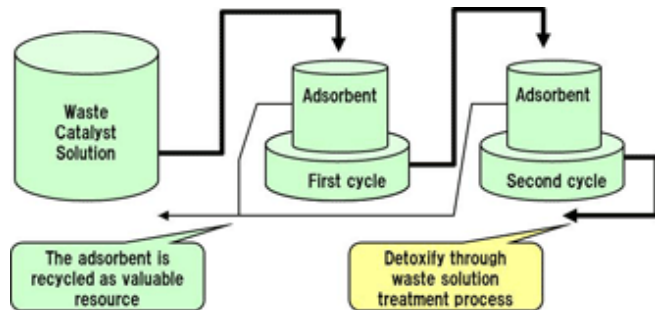
Yokogawa Electric, Sagamihara Site

The manufacture of printed circuit boards requires a process of plating a copper sheet that becomes the base material for the printed circuit board. This process takes the form of chemical plating or electroplating. Either way, the plating bath generates waste solution.

The chemical plating process includes a step where catalyst solution is used to make plating attach to the target surface more easily. Previously, the waste catalyst solution, which contains palladium, could not be removed by any in-house waste solution treatment process. As a result, each year approximately 1.6 tons of waste catalyst solution had to be disposed of as industrial waste requiring special control.

As part of our overall waste reduction effort, the factory has introduced a facility to treat this waste catalyst solution by adsorbing palladium using a special resin. Consequently, an existing waste solution treatment process can now be used to treat waste catalyst solution and discharge treated solution together with other waste solutions. Additionally, the special resin that has adsorbed the palladium can be recycled as a valuable resource. This measure not only reduces the amount of industrial waste requiring special control, but it also generates a positive outcome in terms of cost.

■ Steps for Treatment of Waste Catalyst Solution



Our group is in charge of managing the systems and waste solutions in the factory. We have also issued a manifest so that everyone is aware of waste solutions in terms of the volumes generated. Because we are involved in the actual processes on the production floor, it is easy to come up with improvement ideas as to which waste solutions can be reduced in which ways. Everything was trial-and-error at first, but as our efforts started to bear fruit the process became much more positive.



Kazuhide Hirose,
Komine Factory PWB Manufacturing Dept.
Yokogawa Manufacturing

Reduction of Waste Wires

Yokogawa Manufacturing Komine Factory

A wire cutter is used to process edges and other fine parts of stainless sheets, etc. Cutting is done with a wire, but since a wire can be used only once, formerly the used wire was sold.

As part of its waste-reduction efforts, the Komine Factory gathered recycling-related information and found a system whereby a manufacturer would take 70 kg of used wire from a user and recycle it into new wire, with 20 kg of new wire supplied to the user in the form of profit sharing. We quickly negotiated with the manufacturer and introduced this system.

Not only is wire recycled, but also the bobbins used with wire are recycled, and the annual volume of waste has decreased by approximately 200 kg. Moreover, as new wire is supplied in exchange for used wire, material purchase costs have decreased.

Collection boxes are in place for the receipt of used wire, and persons in charge are properly educated to make sure wire usage is visibly managed. This helps to drive home the spirit of wire conservation and promote improvement ideas such as the readjustment of processing methods.



Collection box for used wire

Various laws and regulations have been put in place, such as the Home Appliance Recycling Law and Law for Promotion of Effective Utilization of Resources in Japan, as well as the Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances in EEE (RoHS) Directives outside Japan. With this background, Yokogawa aims at building a sustainable society in various areas of its business activities.

Based on the principle "Resource procurement with less environmental load = Offering environmentally friendly products", Yokogawa proactively promotes green procurement activities that are environmentally friendly.

Green Procurement Guidelines

Under the philosophy to contribute to building a sustainable society in various areas of business activities, Yokogawa has created the "Green Procurement Guidelines" to promote green procurement activities.

⇒ [Yokogawa Group Green Procurement Guidelines Version 3.2 \(PDF: 168KB\)](#) 

Promotion of Green Purchasing

Our internal online purchase system, provided for employees to buy stationery and other office supplies, makes available data on the percentage of total green purchasing as a means to promote purchases of products certified with the Green Mark and Eco Mark as well as those compliant with the Law on Promoting Green Purchasing. The data thus compiled is also subtotaled by organizational unit, and the results are released through opportunities of environmental education and in our environmental newsletter in order to promote an increase in the percentage of green purchasing.

Recycling of Work Uniform

The Administration Department reviewed and redesigned the work uniforms during fiscal 2011.

By changing the materials used for the collars, cuffs and other areas of the work uniforms and using the same material as that of the main body of the uniform, our uniforms met the criteria for compliance with the Law on Promoting Green Purchasing (polyester fibers obtained from recycled PET resin must be used for at least 25% (ratio by weight) of the total weight of fibers, excluding the lining of the clothes).



Recycling of Work Uniform

Green Purchasing Mass Campaign

Yokogawa took part in the "Five Million GPN Member Action Campaign" sponsored by the Green Purchasing Network (GPN), and advertised the campaign using posters and the environmental newsletters to invite its employees and their family members to participate.



Campaign Poster

In line with the environmental policy of the Yokogawa Group, all group companies are working to preserve biodiversity.

Unit-sales-basis Waste Emissions and Reduction Rates (Compared to Fiscal year 1995)

Yokogawa Electric

Since 2009, Yokogawa has been a participant in "Tokyo Greenship Action," a collaborative effort among the city of Tokyo, local NPOs, and businesses to conserve and revive the woodlands in the hills of Tokyo, and contribute to their biodiversity.

⇒ "Tokyo Greenship Action"
to Protect the Woodlands of Tokyo



Tokyo Greenship Action

Participation in the Tenryu River Water Quality Survey

Yokogawa Electric Komagane Factory

At our Komagane factory, situated along the Tenryu River in Nagano Prefecture, employees and their families are participating in the "Family Water Quality Survey" organized by the Nagano Techno Foundation. The survey was initiated under two themes: "Restoring the Tenryu River where we can swim" and "Building a recycling-oriented society". This year's survey is the eleventh edition of this local event. Every participating family uses a simple water quality analyzer called "Pack Test" to study the water quality at a nearby area of the river and submit a report. The items examined by the water quality survey include water clarity and life forms in the river.

測定日 平成23年 8月 17日 天気:くもり						
場所	時刻	気温[°C]	水温[°C]	0-0-0値	気づいた事	透明度
① 自宅の池	9:30	25.4	17.4	1	手が凍るくらい冷たい感じがした。	50以上
② 駒ヶ池	9:40	23.1	21.6	2	トンボがいっぱい飛いた。	50以上
③ 大沼湖	10:05	30.7	26.1	5	あまり冷たくなかった。	50以上
④ 大瀬田川 ついで河津	10:24	23.3	15.8	1	セミの声がした。	50以上
⑤ 大瀬田川 新田村	10:53	30.3	20.9	3	セミの声が少ない、いつもより水が少ない。	50以上
⑥ 大瀬田川 大瀬田村	11:33	32.9	22.4	3	あまりごっこしていない。	50以上
⑦ 大瀬田川 大瀬田村	12:00	33.3	22.9	4	小さな魚がいた。	50以上

Water Quality Survey List

Artificial Hill Built in the Headquarters in the Image of the Woods in Musashino

Yokogawa Electric

In an empty lot, which was left after part of the building was torn down at the headquarters campus, an artificial hill was made by planting a green lawn and plants. The artificial hill has 37 types of plants such as serrata oak, sawtooth oak, and storax, which are designed in the image of the woods in Musashino. In addition, the azaleas planted along the walkway bloom in the spring, welcoming visitors.



Artificial Hill in the Yokogawa headquarters

Protecting Large Trees in the City of Musashino


Yokogawa Electric

In the city of Musashino, where Yokogawa Electric's headquarters is located, there are approximately 2,000 large trees in the city designated as "environmentally protected." It is under a program called "2000 Large Trees/Symbolic Trees Plan", which has been in place since 1994. Fifty large trees within the premise of Yokogawa Electric's headquarters have been designated under this program and are protected as such.



Protected Large Trees

In 2006, the Yokogawa Group established the "Yokogawa Group Safety and Health Policy" and began implementing the Occupational Safety and Health Management System (OSHMS). Since 2007, the Yokogawa Group has implemented the OSHMS in each of its companies to promote a higher level of safety and health by making continual improvements through risk assessment and other methods.

 [Yokogawa Group Safety and Health Policy Statement pdf](#)

Operation of the Occupational Safety and Health Management System (OSHMS)

Recognizing that "safety and health are a basic responsibility of the management," the Yokogawa Group implements OSHMS to ensure the safety and health of all of its employees and its sub-contractors. Improvements are made in phases, with constant assessments to eliminate or minimize potential risks. Regular evaluations and reviews of the activities are also done through audits. The effectiveness of the system has improved by combining conventional activities, such as safety patrols, and countermeasures against occupational incidences and near misses.

The Yokogawa Group companies in and outside Japan share the same safety and health objectives for all workers, including subcontractors. Moreover, seventeen Yokogawa Group companies have acquired certifications in compliance with OHSAS18001*1, which is internationally recognized.


*1. Occupational Health and Safety Assessment Series.
A certification standard for Occupational Safety and Health Management System.



Safety month at Yokogawa Saudi Arabia office



Safety month at Yokogawa Saudi Arabia office

 [FY2012 Yokogawa Group Safety and Health Objectives](#)

Yokogawa Global QHS (Quality, Health & Safety) Meeting

Yokogawa 2nd Global OSH Meeting was organized with participants from Yokogawa group companies at Yokogawa Tokyo on November 1 & 2, 2011.

In the meeting, responsible section of OSHMS provided OSH status in Yokogawa group companies and expectations.

Then the participated affiliates (in Brazil, China, Europe, Middle East, Russia, SE. Asia and US) presented OSH activities in the region and discussed on kinds of OSH KPI status, common OSH training materials and project safety.

The meeting was ended successfully.

Safety and Health Education

To ensure that the "Yokogawa Group Safety and Health Policy" is adhered to across the entire Yokogawa Group, the "Safety and Health Handbook," which contains basic information and day-to-day rules regarding safety and health, has been created and distributed to all staff and engineers at every Yokogawa Group company. To maintain and improve all levels of activities throughout, persons in charge, committee members and newly appointed personnel are educated through safety and health committee workshops, as well as on-site safety training at customer plants and factories.



safety and Health Handbook

In 2011, Yokogawa Safety and Health Handbook for Site-work Safety Electric version of addition to Safety and Health Handbook specifically focused to Site-work Safety was compiled and distributed throughout Yokogawa group companies. This includes prohibition against use of a mobile phone or pager or hands-free mobile phone device by drivers at any time while driving.

Drive safety training program is also covered by the latest Handbook and the same is conducted in all Yokogawa companies in China, as the thread of traffic accidents is raised these days.



Safety and Health Handbook for site-work safety version

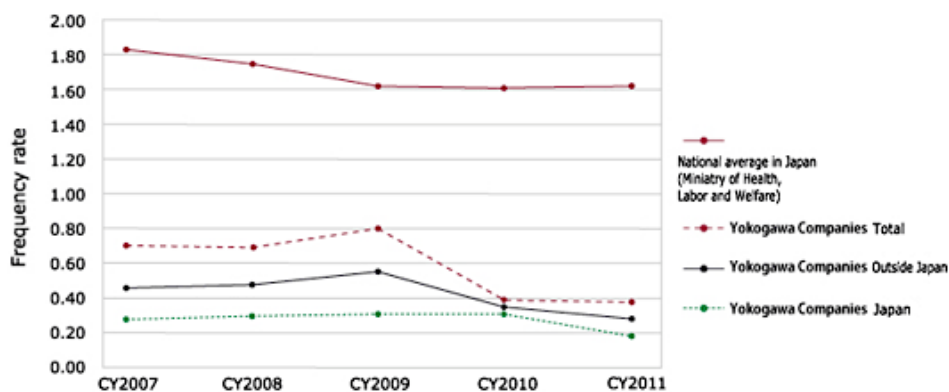
Occupational Incident and Accident Data

The Yokogawa Group has been gathering and analyzing information on occupational accidents experienced by Group companies in and outside Japan on a quarterly basis since 2007, when it introduced OSHMS, as part of an effort to eliminate/reduce occupational accidents and improve the quality of activities thus implemented.

A few major account customers, globally active, require their vendor OSH monitoring. Yokogawa provides Occupational Incident Index of Yokogawa group companies quarterly for their analysis.

Yokogawa group companies being responsible for their projects, conduct project safety program including Risk Assessments at various milestones of project engineering and services.

Frequency Rate of Occupational Accident



Frequency Rate of Occupational Accident=(No. of workers having occupational accident with lost days / total working hours) × 1,000,000

"Tokyo Greenship Action" to Protect the Woodlands of Tokyo

Yokogawa participates in "Tokyo Greenship Action", a collaborative effort among the city of Tokyo, and local NPOs and businesses to preserve and revive the woodlands in the hilly areas of Tokyo, and to contribute to biodiversity. Yokogawa has been a participant since 2009.

About the Target Area (Tatemachi Landscape Conservation Area, Hachioji)

The target area for 2009 was the Tatemachi Landscape Conservation Area of Hachioji (24,392 square meters); a highly accessible conservation area located near the residential part of the Tama hills in Hachioji, Tokyo. Serrata and Sawtooth oaks take up more than half of the area, and Black Locust and Japanese Zelkova (Keyaki) trees can be seen. In addition, a river flows through the conservation area, which is a habitat for fireflies. Local volunteer groups, such as the "Association to Promote Firefly Proliferation", come here regularly to cut grass and thin shrubs.

Once a well-groomed woodland, this area became an abandoned forest without proper care, such as planting, thinning, and tree cutting. Hence, "Tokyo Greenship Action" aims to preserve the scenery of this beautiful hilly area, and to grow a rich variety of biota by continually cutting grass, cutting down and removing dead trees, and planting new ones.

Activities in 2011

Yokogawa participated in the "Tokyo Greenship Action" held on June 25 (Saturday), 2011, in the greenery preservation area of Tatemachi, Hachioji City, for a third consecutive year. Twelve employees from our Group companies and their family members, totaling 27 people, joined the volunteers from the NPO Green Support Hachioji and Ebara Corporation. During the day, Yokogawa employees and family members worked together with employees of Ebara Corporation to trim rampantly grown grass and cut large tree branches for thinning. In the evening, the group received a lecture on the ecology of fireflies from a local expert and watched fireflies dance along the river running through the preservation area. These are some of the comments from the participants: "I learned a great deal about the woodlands near populated areas, as well as fireflies, and now I realize how important the natural environment is, so it was a meaningful activity." "Through the experience of watching the fireflies after work, I was able to witness precious insects and their values, and learned the importance of nature, and I'm satisfied with the program overall." "It was my first time with the event, but I spent a really fun time. My children were very happy, too."

Scenes from the Tokyo Greenship Action.



A group photo was taken.

Activities in 2010

Yokogawa participated in the "Tokyo Greenship Action" held on June 26 (Saturday), 2010, in the greenery preservation area of Tatemachi, Hachioji City, for a second consecutive year. Sixteen family members of employees from our Group companies, totaling 32 people, joined the volunteers from the NPO Green Support Hachioji and Ebara Corporation. The participants checked the "acorn" trees planted last year (November 2009) and were satisfied to see that they had become firmly rooted. To help the young trees continue their growth, the participants also cut away weeds that were growing so rampantly as to cover the entire trees. In the evening, the group received a lecture on the ecology of fireflies from a local expert and watched the fireflies dance along the river in the preservation, like stars that had come to earth.

These are some of the comments received from the participants: "The fireflies reminded me of how important nature is. They made me think that I must do what I can in daily life to save the environment." "Trees are disappearing throughout Japan, and it was a great opportunity to realize this stark reality." "Through this volunteer activity I was able to meet people of different generations and learn about nature close to our life. It was a valuable experience, and I want to use the knowledge I have acquired in my work."

Helping the Disabled Return to Work

The lunchboxes given to the participants on the day of the Tokyo Greenship Action event were purchased from "House of Dandelion," a food delivery service in Hino City, Tokyo, where people with various disabilities work. The participants enjoyed the freshly made, delicious lunches that had been delivered to the site. Purchasing lunchboxes from a company that employs challenged individuals, like House of Dandelion, is one of many things Yokogawa is doing to help the disabled return to work.



Weeds growing out of control



Weeding



Everyone gathered around the bamboo shoots they had dug out.



Handiwork using cypress



Lunchboxes purchased from House of Dandelion



Employees making lunches at House of Dandelion

Yokogawa's corporate citizenship is rooted in the company's philosophy of being pioneers and good citizens. Yokogawa sees its fundamental duties as going above and beyond benefiting society through its normal business activities and complying with the law—it is actively engaged in addressing serious social issues, regional vitalization effort, etc.

Cultivating Future Human Resources



Yokogawa Science Classes addressing the fundamental technologies that are the basis for Yokogawa's business—optics, electronics, radio, etc.

⇒ [more](#)

Community Involvement



The Yokogawa Group's various locations each work to benefit their local communities in ways to address their own specific needs.

⇒ [more](#)

Stakeholder Engagement



Yokogawa is working with an NGO to promote "reduction of infant mortalities" and "improvement of health of pregnant and parturient women," both of which are among the Millennium Development Goals (MDGs) set forth by the United Nations.

⇒ [more](#)

Disaster Assistance



Donations and Financial Assurances for NGOs Made by Yokogawa

⇒ [more](#)

Yokogawa's business is built on its technical strengths in measurement, control, and information, and thereby supports science education in primary schools. The company's hope is that this will develop an interest in science and technology among the next generation. Yokogawa employees also volunteer to serve as instructors at colleges and research institutions. The company also provides materials (such as instruments and research funds) as part of its wide range of support.

Yokogawa Science Classes (Japan)

Concerned that children were not being sufficiently educated in science, Yokogawa started offering the Yokogawa Science Classes in 2006 for primary-school children. The classes are currently offered on several weekends each year in Tokyo. These classes address the fundamental technologies that are the basis for Yokogawa's business—optics, electrics, radio, etc. Instructors are employee volunteers, who often find that their contact with children helps them grow as well. Programs like this are a way to deepen the company's ties with its surrounding communities, as well as a way to encourage an interest in science and technology in the next generation.



Yokogawa Science Classes

The Yokogawa Group's various locations each work to benefit their local communities in ways to address their own specific needs.

Weekend Foster Family Activity at Social Welfare Home (China)

In October of 2011, Yokogawa Electric China Co., Ltd. participated in the "weekend foster family" activity at the Suzhou Municipal Social Welfare Home. Acting as "weekend dads and moms," the volunteer employees of Yokogawa Electric (Suzhou) visited an aquarium to see fish and other aquatic life and had a meal with the children of the home. This activity gave the children, who rarely have a chance to feel the warm affection of parents in their daily lives, an opportunity to enjoy a fun, happy day filled with smiles as a family.



Weekend Foster Family visited an aquarium

Charitable donations and volunteering to community (Australia)

Through the year, Yokogawa Australia (YAU) is involved at a corporate level through direct donations to staff nominated charities. The donations are dedicated to organizations chosen by the staff through a national nomination process. YAU also supports the work of its staff by providing one day a year to each staff member to volunteer for the charity of their choice. The RAC Freeway Bike Ride for Asthma is one of such volunteering activity. 10 YAU employees participated on the 18th March 2012 and contributed to liven up this event.



YAU employee in the RAC Freeway Bike Ride

A Friend to Environment (Middle East)

"Yokogawa Middle East (YME) is actively contributing to local community through its various activities. "A Friend to Environment" is one of YME's activities and was held in March 2012 with more than 200 participants of YME Employees and their family members in Bahrain and Saudi Arabia and in May 2012 in UAE in Abu Dhabi with about 100 participants. "A Friend to Environment" includes beach cleaning, spreading the knowledge of clean environment to the society through booklets/ messages/distribution of trash bags to the cars usage. The participants successfully interacted with environment and neighbors in the community."



Beach cleaning by YME employees and family members

Donations for Welfare Assistance (Korea)

Yokogawa Electric Korea Co., Ltd. (YKO) has made annual donations to various causes, including financial support to children and financially disadvantaged neighbors. Actually, the year 2011 was the period that YKO could expand our CSR activities to the largest level in YKO's history. To be more specific about its CSR activities, YKO held various donation events such as the Kimchi (Korean Pickle)-making and coal briquette delivery to the neighbors for their wintering, apart from financial support to local community. Besides, YKO is supporting financial assistance every month to more than 10 children all over the world, with concerted cooperation with a volunteer club within YKO.



YKO's donation events

Thailand Flood Crisis (Thailand)

⇒ Disaster Assistance

Yokogawa has, over the years, worked to resolve issues in the local community by building relationships with educational institutions, NGOs and other local stakeholders.

Opening a Technical Center in the Republic of Tatarstan Jointly with the Kazan Institute of Technology

Yokogawa Electric CIS in Russia has opened a Technical Center on the campus of the Kazan Institute of Technology in the Republic of Tatarstan of the Russian Federation. Established jointly with the Kazan Institute of Technology, the mission of the Technical Center is to promote education in the field of measurement and control.

The Kazan Institute of Technology, located in the heart of Tatarstan's capital city, is one of the Russian Federation's large-scale universities. The Technical Center has a simulation plant in which the integrated production control system CENTUM VP, safety instrumentation system ProSafe-RS, network-based production system STARDOM, integrated dynamic simulation environment Omega-Land, differential-pressure/pressure transducers, recorders and other cutting-edge products from Yokogawa are used. The Center offers a curriculum consisting of lectures and workshops on latest measurement/control technologies for university students and engineers working at petroleum plants, petrochemical plants and other parts of the process industry.

Yokogawa has, since the opening of the Moscow Representative Office in 1993, expanded its scope of sales, engineering and maintenance services in Russia by setting up offices and plants in various countries comprising the Commonwealth of Independent States (CIS). The CIS countries occupy regions blessed with ample resources such as oil and natural gas, and therefore large-scale development projects are expected. Accordingly, it is an important challenge for such regions to train talented individuals with knowledge of latest measurement/control technologies. By operating a training center in Moscow, as well as by promoting the latest measurement/control technologies, Yokogawa contributes to the development of industries and human resources in these regions.



The opening ceremony was attended by President Minnihanov of the Republic of Tatarstan.

⇒ Human Resource Development in the Middle East

Working for Improvement of the Health of mothers and children in Indonesia

Yokogawa has been working to improve the health of mothers and children through Peoples Hope Japan (a certified NPO) in Serang, Indonesia.

The province of Serang is located 80 km west of the capital, Jakarta. Generally, the people of Serang live in poor villages scattered throughout the state. Two of the most serious problems in Serang are that many pregnant women and babies are dying due to complications at childbirth, while infants and children under five years old suffer from malnutrition.

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Peoples Hope Japan trained midwives, and educated expectant women and women of child-bearing age on the guidelines for healthy pregnancy. In 2009 the group built a regional health center to help with safe deliveries of babies. Staffed by resident midwives, the center can handle deliveries 24 hours a day. The region has approximately 500 women of child-bearing age, and each year about 100 babies are born.

In 2011 we worked on the "Nutritional Farm in Every Village" project in addition to the existing programs designed to supply nutritious lunches, provide education on nutrition and develop healthful menus. This project aims to help the residents of each village grow vegetables and fruits using land that would otherwise remain vacant or wild. Thus it is designed as an independent, ongoing initiative to improve nutrition.

In September 2011, employees of PT Yokogawa Indonesia participated in a maternal and child health consultation event held at the regional health center. The participants in this event were provided with information on immunizations, proper diet, symptoms of illnesses and diseases, etc.

These activities are part of greater efforts to achieve the United Nations' Millennium Development Goals.

Millennium Development Goals	
Goal 4 (Reduction of infant mortality)	Reduce, by 2015, the mortality of infants under five months to one-third the level in 1990.
Goal 5 (Improved health of pregnant and parturient women)	Reduce, by 2015, the mortality of pregnant and parturient women to one-fourth the level in 1990.



The health center



A healthful-menu contest using harvests from the nutritional farm



Maternal and child health consultation event for pregnant and parturient women



Staff of the regional health center and Yokogawa Group employees (back row left)

⇒ Peoples Hope Japan (a certified NPO)

Yokogawa is always looking for ways to provide assistance in the wake of severe natural disasters that affect its business activities.

Thailand Flood Crisis

In 2011, severe floods occurred in Thailand during the monsoon season and inundated 6 million hectares of land, a huge range from northern area of the country to the parts of the capital city of Bangkok.

To survive the disaster, Yokogawa Thailand (YTH) set up a Crisis Management team to manage and disseminate timely information, and to set up preventive plans and actions to ensure safety of company properties and the employees. Business Continuing Plan ensured that business operations and customer support services continued as smooth as possible.

For YTH's employees, the Home Stay Program housed staff and affected families who were evacuated from the risky areas at the office. For our customers, a dedicated hotline and YTH Center Team were set up. Our engineering and service staff were decentralized and were fully operational ready at all the five branches, and other support teams, spare parts and equipment were also ready to help customers recover and resume plant operation quickly.

With an effective crisis management plan in action, the management and staff of YTH banded together to fight this crisis as one vigilant team.

Throughout the crisis, Yokogawa members demonstrated excellent vigilance and teamwork. All effort and resources were directed to ensure that customers' business and plant operations resumed quickly and smoothly.

After the flood, Yokogawa provided a donation to the Red Cross, Thailand as well as food and daily supplies.



Service staff on boat to visit and support customer's plant recovery during floodwaters



Food and daily supplies stocked up to support Business Continuity Plan



Yokogawa Thailand donates food supplies through Channel 3 TV Broadcast



Vigilance-spirited Yokogawa staff riding through the crisis in unity

Disaster Assistance Provided in Recent Years

Yokogawa Electric Corporation has provided the following donation to aid the victims of large disaster.

Time	Disaster	Beneficiary	Amount donated
March 2011	East Japan Earthquake	Japan Platform	50 million yen
July 2010	Foot-and-Mouth Epidemic in Miyazaki Prefecture	Takanabe-cho, Miyazaki Prefecture	1 million yen
January 2010	Haiti Earthquake	Japan Platform	1 million yen
October 2009	Indonesia Sumatra Earthquake	Japan Platform	1 million yen

Activities to Improve Customer Satisfaction

We at Yokogawa strive to achieve greater customer satisfaction at our offices and factories around the world.

Yokogawa Electric (Japan) has conducted a customer satisfaction survey since 2008 on all customers who have received a product seminar at our training centers in Japan. In 2011, 1628 questionnaires were collected, and the results were compiled and analyzed. Concurrently, a system was put in place to share the survey responses and comments among all employees on the company's intranet in order to help improve product functions and services.

In its customer services, Yokogawa Electric Asia Pte. Ltd. in Singapore places an emphasis on flexibility and speed in addition to quality, delivery schedule and cost. It measures and monitors its customer satisfaction through completion and delivery ratio and corrective action request (CAR). Moreover, it conducts Customer Satisfaction Survey to identify the customer satisfaction level every two years.

Yokogawa Australia Pty. Ltd. in Australia conducted a customer satisfaction survey on the Internet last year. According to the survey results, 95% of the respondents said they would recommend Yokogawa Australia to others.

The Group companies are also obtaining feedback from customers through e-mailed surveys, customer visits, mailed questionnaires and conversations at product seminars, so as to provide more satisfactory products and services.


Quality First Approach

Since the establishment, we have implemented our quality management system across all processes, as we are convinced that Quality First Approach is the basis of customer satisfaction. All the main Group companies have attained ISO9001 certification starting with Yokogawa Electric in 1992 and working on delivery of the same quality worldwide.

We have continuously valued our customers' feedback to develop satisfactory products, and have gained a high level of satisfaction from our customers with respect to the accuracy and functionality of our products.

The basic quality policy

1. Quality management is carried out in order to implement customer focus based on "Quality First," which is the spirit of foundation, and "Healthy and Profitable Management" through improvements in management quality.
2. Products that meet statutory and regulatory requirements as well as customer requirements are supplied.
3. Appropriate quality management systems conforming to the International Standard ISO 9001 requirements are established and implemented. In addition, the effectiveness of those systems is continually improved.
4. Customer requirements are fulfilled and customer satisfaction is increased through the results of quality activities in all organizations and personnel. For this purpose, each employee must feel that the quality of his or her work has a direct bearing on product quality, and that the company believes in "Quality First".
5. The head of each organization is responsible for the quality of the relevant businesses. The responsibilities include ensuring that adequate resources are made available.

⇒ Quality Assurance 

Improvement of the Management Structure as Part of Internal Control

As part of the Yokogawa Group's internal control, Yokogawa's management structure governs the overall business processes, including its relationship with customers and suppliers. For the procurement processes in the supply chain, Yokogawa Group's "Group Procurement Code" has been defined based on its Corporate Philosophy and Standards of Business Conduct, to ensure fair and equitable transactions. Yokogawa observes the local ordinances of the country and regions with whom we do business, began working on the issue of conflict minerals, and focuses on establishing a supply chain that considers environmental protection.

In 2008, the Yokogawa Group Supply Chain CSR Guideline, which is compliant with JEITA*, was created and published. In addition, Yokogawa's basic procurement policy, which is summarized in three points, is used as a set of principles to guide its every day operations. In 2009, a network of responsible parties of Yokogawa Group's sales and procurement processes was built as a foundation for all supply chain CSR activities.

Three Basic Procurement Principles

1. Create an ethical, clear, and open corporate culture and establish ourselves as a company that can be trusted by society.
2. Promote socially responsible procurement activities throughout the supply chain, including not only the Yokogawa Group, but also the suppliers of Yokogawa.
3. Comprehensively evaluate and select suppliers, giving priority to our commitment to being a good corporate citizen.

⇒ Yokogawa Group Supply Chain CSR Guideline

Strengthening of Partnerships with the Suppliers

Yokogawa Electric, in order to reinforce its partnerships, is actively organizing events on a regular basis to promote discussion and deepen trust with key suppliers and their management teams.

For example, each year we host the "Supplier Policy Presentation Meeting", in which we explain our management policy, business plan, purchasing strategy, etc., to the suppliers.

Additionally, we organize "Component Exhibitions" and "Technical Seminars" through the Purchasing Department in order to introduce the products of suppliers, along with market trends, component trends and other relevant information, to the product development teams of companies within the Yokogawa Group.



Supplier Policy Presentation Meeting

Reinforcement of Compliant Procurement

Yokogawa regularly organizes education programs for group companies in Japan so that they can learn about the "Act Against Delay in Payment of Subcontract Proceeds, Etc., to Subcontractors" as it applies to purchasing processes. Furthermore, we have added a new chapter on compliance to the Master Transaction Agreement in order to reinforce compliant procurement. As part of this effort, we are working to build greater ties/partnerships with the suppliers and prevent the establishment of ties with antisocial forces in order to eliminate such forces from society. We have set up a "help line" as a channel for reporting and inquiry that can be contacted by suppliers, should they find an actual or potential violation of compliance.

Promotion of Green Procurement

Under the philosophy to contribute to building a sustainable society in various areas of business activities, Yokogawa has created the "Green Procurement Guidelines" to promote green procurement activities. Specifically, we have established a system for promoting the control of chemical substances contained in our products and are also investigating/controlling chemical substances in materials/components.

⇒ Yokogawa Group Green Procurement Guidelines

*JEITA: Japan Electronics and Information Technology Industries Association

Developing and Utilizing Global-Minded Human Resources

Employees Are Valuable as Yokogawa's "Human Assets"
We at Yokogawa have established a compliance guideline that requires us to comply with the international standards on human rights; consider the different geographical and cultural backgrounds of other employees when working with them; refrain from discrimination on the basis of race, nationality, sex, religion, age or disability of any kind; and drive home these principles to all our Group companies. One of the strengths — actually a requirement — of Yokogawa is the ability to maintain and utilize a pool of diverse talents as we carry forth our global expansion. Thus we capitalize upon the skills of our employees, with their diverse ethnic backgrounds and nationalities, so that we can make decisions from a global perspective. We also provide our employees with various opportunities to help develop their careers, promote a healthful work-life balance, and actively employ persons with disabilities.



- ⇒ Human Rights
- ⇒ Career Development and Work Life Balance
- ⇒ Supporting Engineers on Deputation
- ⇒ Employee Assistance Program
- ⇒ Employment of People with Disabilities

Occupational Safety and Health

In 2006, the Yokogawa Group established the "Yokogawa Group Health and Safety Policy" and began implementing the Occupational Safety and Health Management System (OSHMS). Since 2007, the Yokogawa Group has implemented the OSHMS in each of its companies to promote a higher level of safety and health by making continual improvements through risk assessment and other methods.

- ⇒ more

Yokogawa has explicitly defined respect for human rights as part of the group's overall goals, in its Philosophy, Standards of Business Conduct, and Group Management Standards. The company has also set up compliance hotlines for everyone working at Yokogawa as a way to avoid human-rights violations before they happen.

Philosophy

Yokogawa's corporate philosophy defines "contributing to society" as a corporate mission, and calls for its employees to be good citizens.

Based on this philosophy, Yokogawa uses measurement, control and information as tools to contribute to social infrastructures that support people's daily living such as energy, communications, waterworks, etc, and to contribute to industry infrastructures, to make them run more efficiently and to help people work more safely. This philosophy is practiced by every employee and in all of the countries where Yokogawa operates, its employees have been willing volunteers, helping out when natural disasters occur.

⇒ Corporate Brand and Philosophy

Standards of Business Conduct

One of the five pillars in our Standards of Business Conduct explicitly states that the company will uphold respect for human rights and respect the dignity of all. Some of the particular courses of action that follow from this are preventing harassment, discrimination, privacy intrusions and maintaining an overall healthy workplace.

⇒ Standards of Business Conduct

Yokogawa Group Management Standards

The Yokogawa Group Management Standards, which states in writing the basic policies required of group management, applies to every branch of the Yokogawa group. It gives clear rules and guidelines relating to human rights, obedience to the law, workplace safety, hygiene, etc.

The Yokogawa Group Compliance Guidelines make the following statement regarding human rights.

03 Respect for basic human rights

The Yokogawa Group always respects the basic human rights and personal dignity of every person with whom we are involved.

27 Equal Opportunity

Thanks to our fair and impartial personnel system operating under the basic policy of the Yokogawa Group, each employee is afforded equal opportunities in hiring, placement, promotion, pay rises, training, etc. An employee in a position of management or leadership must have a basic knowledge of the labor laws of the country in question, and must have a thorough knowledge of labor contracts and work regulations. It is important that he or she work on the basis of this knowledge to maintain a workplace free of unfair discrimination, engaging in ample communication with his or her subordinates and ensuring that day-to-day personnel management goes smoothly.

28 Prohibition of forced labor/child labor

Forced labor in any form whatsoever is not to be allowed; nor is any person to be made to work against their will; nor is it acceptable for children below the minimum working age of each country to be employed.

Care must be taken to ensure that we do not support inhumane conduct even indirectly, for example through the actions of business partners.

29 Ensuring health and safety

In addition to observing the laws relating to occupational safety and health, we have established our own independent standards and are striving to improve safety and health. We are working on a program of improvements to ensure the safety of every employee working for the Yokogawa Group, promote better health, and create a pleasant working environment. Each and every employee must act to cooperate with the safety and health measures that have been decided upon.

30 Prohibition of harassment

No form of harassment whatsoever is acceptable, whether it be sexual harassment, stalking, or power harassment. We respect each other as individual human beings, and have built up a corporate atmosphere in which harassment is not accepted.

Attention to human rights in the supply chain

Following its Group Management Standards, Yokogawa upholds their philosophy for human rights throughout its supply chain. The Supply Chain CSR Guidelines include guidelines prohibiting forced labor, inhumane treatment and infringements of human rights, child labor, and discrimination, while ensuring appropriate wages, regulated working hours, and the right to freedom of association, and vendors are asked to follow these guidelines.

⇒ Supply Chain Responsibility

UN Global Compact

Yokogawa has declared its support for the UN Global Compact. The company respects the human-rights guidelines proclaimed in the Global Compact, and upholds international human-rights standards.

⇒ UN Global Compact Index

ISO26000

ISO26000 is an international standard for an organization's social responsibility which the International Organization for Standardization (ISO) published in November 2010. It provides seven core subjects, such as Organizational Governance, Human Rights, Labor Practices or The Environment. Yokogawa respects the ISO26000 guidance in our CSR actions as a global company and pay attention to the human rights in our all business conduct.

Philosophy

We carry out HR measures to realize “the right person on the right job” so that each employee is able to perform at their full capacity.

We have created a system where the employees are able to notify their short-term and mid-term career plans to their managers and also promote their acquired skills and experiences to the managers of other department. These systems allow the employees to autonomously build their own careers.

Under the job opportunity system, employees are able to submit their career plans without approval from his/her superiors. Such a system helps to expedite the speedy deployment of the resources especially under the circumstances where there is a manpower requirement due to new business or project.

Additionally, we have a training program for select employees to help develop the skills and qualities needed to become future global leaders.

"Refresh & Challenge" Program to Support Employees Work-Life Balance

We provide a program to help the employees design their career and life when they reach a turning point in his or her career. This is an awareness program for managing health and for building future life plan.

As the program name "Refresh & Challenge" suggests, participants are given a fixed number of off days after the training for refreshing themselves physically and mentally. The program provides ideas to support the employees in setting new goals.

In particular, in the training provided for employees at the age of 45, participants are able to take 15 days of leave from work. They can utilize this leave freely. Some of the participants join the training course to obtain qualifications and others review their future plans on private life and career. These 15 days of leave help the employees to regain their motivation and energy.



"Refresh & Challenge"
Seminar at Yokogawa Electric

Improving Employee Motivation by Promoting Work-Life Balance

We make an effort to provide a work environment where the employees are able to gain satisfaction while maintaining a good balance between their work and private life.

For instance, the employees are able to utilize work hours for child-care and nursing of elderly family members, in additions to the number hours specified under the statutory benefit. We have also introduced a system to provide financial support to our employees who are raising children. Employees under such conditions are able to receive 100,000 yen annually per children.

Many of our employees, both male and female, are making full use of other company supports such as flexible working hours or paid maternal leave. These systems are helping increase employees' motivation.

In September 2006, we opened a day care center near Yokogawa Headquarters.

The center is contributing to the local communities as it can be utilized by both the employees of Yokogawa and the people living in the vicinities.

In fiscal year 2007, Yokogawa was certified by the Chief of the Tokyo Labor Bureau as an Enterprise Supporting Balanced Work and Family life.

Enhancing Support for Engineers on Deputation

Yokogawa's increasing volume of global project has been supported by our engineers across our organization. Some engineers leave their home countries on deputation in order to work on-site for long-term as is required for their roles and the length of their involvement in a project.

Engineers on deputation require special attention due to their separation from home and placement in isolated working environments. These distances necessitate that such special attention be given from both the Home and Host Companies.

The Engagement Guidelines for Engineers on Deputation—which contain specific points and rules for engineers on deputation—are now being prepared for release in 2012. After a trial period, the guidelines will be introduced at all group companies.

The guidelines are intended to enhance support for personnel management of engineers on deputation. It defines the shared role and responsibilities of managers at both Home and Host Companies. It also defines avenues for consultation and communication when there are issues and concerns that need to be addressed.

For instance, a Home Manager shall maintain constant communication with an engineer by checking the engineer's progress reports as a starting point for monitoring work progress. Special attention should be paid to the level of induction, adaptability and well-being of the individual engineer. The Home Manager shall also keep engineers posted on events and news of the Home consistently reinforcing close tie between the engineer and the Home Company.

A Host Manager must be able to handle grievances and the welfare of the employee by maintaining close communication with the employee. The Host Manager shall also try to make the deputation a learning and growing opportunity for engineers by actively supporting them in their development.

The guidelines also specify what needs to be agreed upon and what needs to be followed in order to help ensure mutual understanding and systematic operation between concerned parties.

Regardless of where we work or how far we are separated, we support our employees as a part of One Global Yokogawa family.



Engineers from various home countries are collaborating in a global project.

Promotion of EAP for a healthy, rewarding company life

We have introduced the Employee Assistance Program (EAP), which is designed to help employees more fully demonstrate their skills instead of being too stressed to conduct their work as effectively as possible.

Yokogawa's EAP, in particular, provides a comprehensive set of mental-health support programs, such as those for the prevention and early detection of stress, early care and treatment, and assistance for returning to work after a leave of absence for recuperation. It is our goal to ensure a healthy, fulfilling work environment for all our employees.

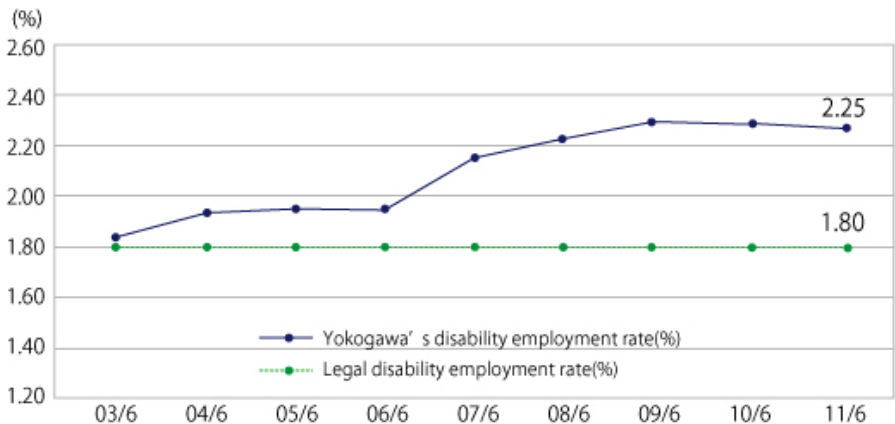
Key activities under EAP

Education/PR	Utilize e-mail and web pages to provide relevant information that will help employees gain a better understanding of mental health.
Group training	Conduct company-wide training programs (based on voluntary participation) and level-specific training programs to promote the prevention and early detection of stress.
Stress check	Based on the results of the stress check, identify causes of stress in the workplace. Implement employee-led programs and activities, with the Company's support, in order to prevent, contain and remove these causes so as to ensure a more comfortable workplace.
Assistance for returning to work	To care for the employee who suffers from mental health problems or takes a leave of absence for recuperation, and to ensure the smooth reinstatement of those who return to work after recovery so as to prevent them from falling into the same problems again, we have implemented a system to provide proper support for each individual or workplace depending on the seriousness of the condition or situation.
Consultation	We have a system to help our employees seek consultation within the company or from external institutions specialized not only in mental health but also in various areas of concern including career issues.

Employing and developing people with disabilities

Yokogawa has hired persons with disabilities since the establishment of its Normalization Project in 1992. We continue to meet the legal employment rate for such individuals, and our skilled employees with disabilities are engaged in all areas of our business, from engineering and manufacturing to administration. The Yokogawa Group promotes the employment of disabled persons, with each company hiring and utilizing people facing different physical and mental challenges who can better contribute to the specific business of the company. Over the past several years, the ratio of employees with disabilities within the Group has, to a significant degree, exceeded the legal requirement. Yokogawa will continue to provide employment and career opportunities for people with disabilities.

Disability employment rate (As of June 1st each year)



A special subsidiary for the employment of disabled persons

Since the 1999 establishment of Yokogawa Foundry Corporation with the purpose of hiring persons with mental disabilities, we have provided a range of training programs for our employees with disabilities so that they can try different types of work and thereby discover their unique value as contributors to the success of our business.

Taking on challenges to receive public qualifications and participate in external events (fy 2011)

National Skills Competition for People with Disabilities (Abilympics 2011)

- Tokyo Meet (February 18, 2012)
- Silver medal winner (Office Assistant Category).....Satoru Matsumoto
- Bronze medal winner (Office Assistant Category).....Takahiro Uehar
- Special prize winner (Office Assistant Category).....Kenji Itou
- Special prize winner (PC Data Entry Category)Shun Uchida



Tokyo Meet Member

Osaka Meet (July 15, 2011)

Bronze medal winner (PC Data Entry Category).....Shizuko Tsuji
Special prize winner (PC Data Entry Category).....Masakazu Yasuda



Osaka Meet Member

Many of our employees have actively participated in the Abilympics every year. Their results have been phenomenal, including a silver medal at the 2007 International Abilympics and a silver medal at the 2008 National Abilympics.

Visitors to Yokogawa Foundry

In 2011, a total of 365 visitors from 76 organizations visited Yokogawa Foundry.

Yokogawa is actively engaged in fulfilling its corporate social responsibilities in the areas of society and environment, business activities, human resources, and management.

Aiming to be a company that is trusted in the global markets, we have positioned compliance as our number one management priority. We have also strengthened our internal control system and risk management.

Corporate Governance

Yokogawa's basic system of corporate governance including business execution system, board of directors, board of auditors, and whole structure

⇒ more

Internal Control System

Yokogawa's "internal control" is a management process in which business resources are allocated appropriately and moved functionally.

⇒ more

Anti-corruption and Compliance

System to promote compliance, compliance training, compliance hotline, and global awareness survey

⇒ more

Risk Management

Risk survey, classification of risks, management system, risk reporting, and BCP

⇒ more

Information Security

Information security measures to address three aspects: people, equipment, and information technology

⇒ more

At Yokogawa, "internal control" is a management process in which business resources, such as human resources, assets, and budgets, etc., are allocated appropriately and moved functionally to increase the corporate value. An internal control system is constructed as a means to achieve internal control; this is used to control both the positive and negative aspects. By doing this, Yokogawa aims at improving the corporate value of the entire Group.

The Structure of the Internal Control System

The internal control system of the Yokogawa Group consists of 10 control systems and 4 subsystems as shown in the table below: Each control system sweeps across all divisions that are conducting business activities.

Internal Control Systems	Subsystems	Primary laws (excerpt)
Business Ethics		General law, Whistleblower Protection Act, etc.
Decision Making		Corporate law etc.
Quality Management		Laws concerning products, such as Product Liability Act and Measurement Act, etc.
Labor Management		Labor Standards Act, Act on Securing, Etc. of Equal Opportunity and Treatment between Men and Women in Employment, etc.
Environmental, Safety and Health		General environmental laws, Industrial Safety and Health Act, etc.
Information Security Management		Unfair Competition Prevention Act, Act on the Protection of Personal Information, etc.
Export Control		Foreign Exchange Law, etc.
Financial Reporting	Financial reporting	Financial Instruments and Exchange Act
	Procurement management	Financial Instruments and Exchange Act, Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors
	Insider Trading Prevention	Financial Instruments and Exchange Law
	Information Disclosure	Corporate law, Financial Instruments and Exchange Law, etc.
Crisis Management		General laws
Corporate Auditing Infrastructure		Corporate law

As for each internal control system, the relevant key result indicators and action indicators are clearly defined and the PDCA cycle is applied according to the evaluations of the respective indicators' achievement levels.

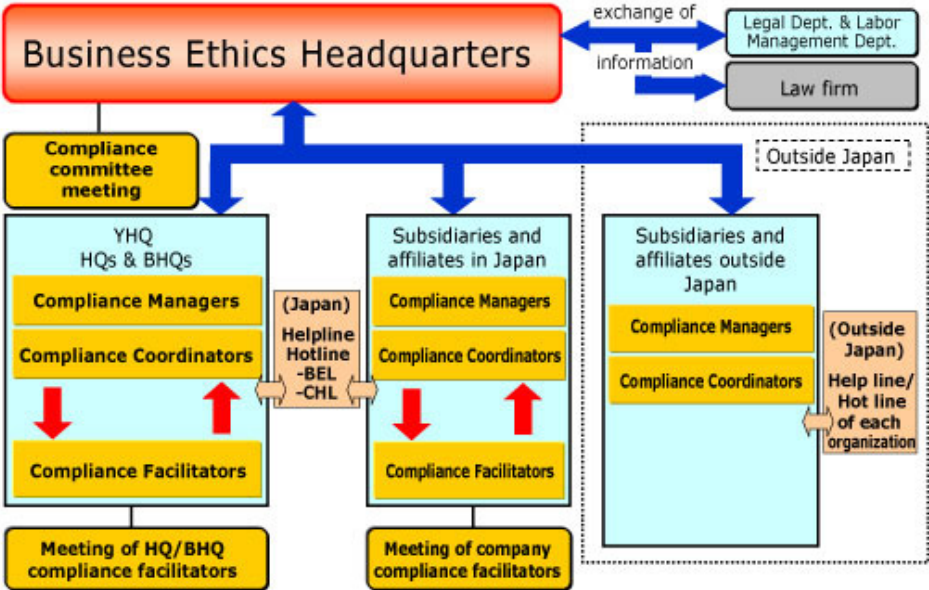
Anti-corruption and Compliance

Yokogawa promotes compliance management strongly throughout its entire group, with the slogan, "compliance above everything else". It aims to be a healthy and open business with two pillar foundations: "corporate culture that encourages ethical conduct" and "systems to prevent unethical conduct."



Provision of Compliance Promotion Structure

To build a "corporate culture that encourages ethical conduct" and "systems to prevent unethical conduct," a compliance promotion structure has been set in place globally. In Japan, compliance facilitators, who are advisors in the workplace, drive activities designed to communicate and entrench compliance awareness. A leader is selected from among the compliance facilitators in each organization, and all leaders gather at the "Compliance Committee" meeting held on a regular basis in order to share information and monitor progress.



Establishment of Anti-bribery Guideline (Internal Bylaw)

We have established a specific guideline on prevention of bribery of not only public servants but also private citizens in Japan and abroad, as an internal bylaw, in order to ensure compliance with the anti-bribery law in each country where the Yokogawa Group conducts business and prevent bribery while engaging in corporate activities in a fair, proper manner. We have organized training, etc., in order to drive home this guideline to all members of the Group.

Conducting Enlightenment Activities

Compliance training and business ethics campaign are conducted.

⇒ Enlightenment Activities

Use of Consultation and Reporting System

To quickly identify and address compliance issues, a report and inquiry channel has been established. In Japan two hotlines are available: an internal hotline (Business Ethics Line: BEL) and an external hotline, staffed with lawyers (Compliance Hotline: CHL). The identity of the reporting employee is kept confidential, and a prompt investigation is conducted in compliance with the Manual of Investigation. Overseas, we have reporting systems with which to share information. We have also made the similar hotlines available overseas that are managed locally, and issues reported through the hotlines are shared through a reporting system.

Performing of Global Awareness Survey

An awareness survey regarding compliance is conducted for all Yokogawa Group employees every year. After analyzing the results by workplace and function in order to visually track how the compliance awareness of employees changes over time, the results are then used to facilitate the planning of the following year's activities.

Conducting Compliance Training

Yokogawa conducts compliance education and training to foster employees' awareness of compliance and a corporate culture that emphasizes fair, clear and open business conducts. In the fiscal year 2011, Yokogawa conducted the following training/education programs to help foster awareness of compliance throughout the Group.

- Compliance Training for managers of the Yokogawa Group in Japan
- Compliance Education for new managers in Japan
- Compliance Training for general employees of Yokogawa Group in Japan
- Compliance Education for employees who are to be posted outside Japan
- Compliance Education for new employees of Yokogawa Group
- Compliance Training for employees of subsidiaries outside Japan



Training for Managers in Japan



Training in Singapore



Training in South Korea



Compliance Slogans Contest in China

Use of Compliance Guidelines

Subsequent to the Japanese version of "Compliance Guidelines for Yokogawa Group" issued in 2007, in the following years English, Chinese and Portuguese versions were published. In 2011, compliance coordinators at overseas subsidiaries used those guidelines to strengthen their compliance training.

Compliance News Issued

The "Compliance News" is issued bimonthly to all Group employees. It features timely discussions designed to raise awareness of compliance among all employees.



Compliance News

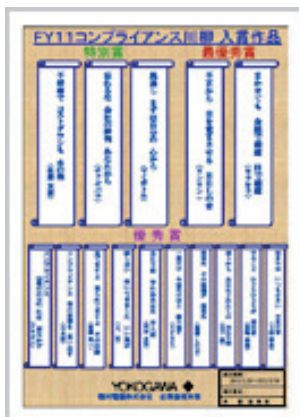
Revised Misconduct Case Studies Issued

The "Misconduct Case Studies" originally issued in 2008, was revised again in 2011 by adding/supplementing new examples and "Points on Conversation in Workplace" was added to the latest handbook. The handbook is used as a study material in employee training programs and study group sessions held in the workplace.

Compliance Week

"Compliance Week" in which all employees of Group companies throughout Japan participated, was held again in the fiscal year 2011 to help permeate and embed awareness of compliance. The week consisted of the following:

- A message from the head of Business Ethics Headquarters regarding "Compliance above everything else."
- A special lecture on compliance was held, to which we invited the attorney Shigeru Nakajima. A total of 220 manager-level employees attended the lecture.
- E-learning for all employees to help deepen their understanding of compliance.
- A "Compliance Slogans Contest" was held. Out of the 370 entries submitted, 15 entries were given an award of excellence and were featured in the company newsletter, on posters and the intranet, and employees at each workplace chanted a selected different slogan each day.



Poster Featuring Winning Compliance Slogans



Employees Chanting a Compliance Slogan

Risk Survey

We are conducting a risk survey for all domestic and foreign affiliates and for the headquarters in the Yokogawa Group. The survey is conducted as a self-assessment of the state of risk extraction and risk management, using a risk survey sheet based on the book, **Learn Risk Management from Leading Companies -- Practice Text**, issued by METI. "Risk" is defined as something that could affect the management of the Yokogawa Group. We further define risks that occurred in the past or is currently occurring as "explicit risks", and foreseeable risks that have not yet surfaced as "implicit risks".

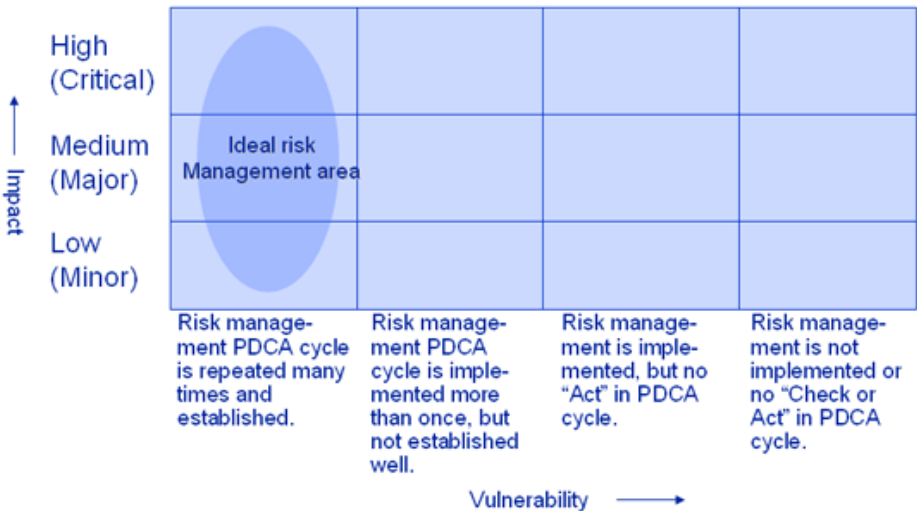
METI: the Ministry of Economy, Trade and Industry

Classification of Risks

The risks extracted from the survey were classified into two categories, "corporate risks" and "business risks". "Corporate risks" deal with the Yokogawa Group's internal control systems, and is handled from each perspective (e.g. quality, environment-health and safety, and information security, etc.) "Business risks" deal with our decision making. They are classified into "1. risks relating to the external environment", "2. risks relating to achieving business plan", "3. risks relating to partnerships with other companies", and "4. risks relating to human resources (recruiting, training, and utilization, etc.)".

Risk Management

We use the PDCA cycle management to avoid, reduce, transfer and retain risks. The risk map is used to analyze situations in risk management.



Approach to Risk Assessment

The Yokogawa Group's risk map places crisis events (High), semi-crisis events (Medium) and minor events (Low) along the vertical axis representing the "impact of risk." Each crisis event is defined according to a set of rules specified by the Group. The horizontal axis represents the "degree of vulnerability of risk management," as measured on four levels from the PDCA (Plan, Do, Check, Act) viewpoints recommended by the International Division of the Institute of Internal Auditors. The general risk-occurrence frequency is also analyzed for each risk thus identified.

Reporting the Results of the Risk Survey and Risk Management

We reported the results of the risk survey and the risk management at the board and management meetings. We are continuously reducing the risks that are not well managed, and are also strengthening our risk management.

Escalation of Information

In the event of a disaster, accident, or incident that can seriously impact the Yokogawa Group companies' management and/or the lives of their officers and employees, the concerned organization must take prompt action to minimize the damage by gathering information and reporting back to the Group's top management.

To address this issue, we have created the "Guidelines for Reporting Disasters, Accidents, and Incidents". These guidelines have been prepared to advise all departments and affiliates in the Yokogawa Group on the reporting procedures to follow in the event of such disasters.

Business Continuity Plan (BCP)

Our control business, which is a core segment of the Company, is deeply tied to social infrastructures such as electricity, gas and water supply. To continue with our business activities as much as possible in the event of a disaster and quickly help maintain and restore social infrastructure, we developed the "Yokogawa Group Business Continuity Plan (BCP) in case of a Major Earthquake in Tokyo Metropolitan Area" in March 2010. The plan spells out action guidelines to continue business in case of a major earthquake in Japan, infection, and so on. The Guideline has been communicated to all group companies worldwide, and members of the entire Group have worked together to improve the Guideline.

To ensure the BCP can function effectively in the event of a disaster, the members of the in-house crisis management organization--including members of the management team--conduct drills on a regular basis.

After the Great East Japan Earthquake in March 2011, we revised the BCP reconsidering emergency responses, initial actions, crisis management organization, communication with the group companies and customers outside Japan, etc. Yokogawa will continue to review the content of the BCP to prepare for possible disasters.

The Yokogawa Group works together with customers to provide them with solutions. To protect important information entrusted to us by our stakeholders, we implement information security measures to address three aspects: people, equipment, and information technology (IT).

People: Information Security Training

An important way to protect information is to raise the security awareness of each employee by training them on how to handle information. To ensure that Yokogawa's employees appreciate on the importance of information security and keep their knowledge up to date, the Yokogawa Group uses an e-learning system to annually provide training to all employees. Based on the belief that "a good beginning makes a good ending," the Group provides training to new employees who are entering straight out of university or in mid-career to familiarize them with the rules of their new workplace. We also review the details and results of the training through information security audits.

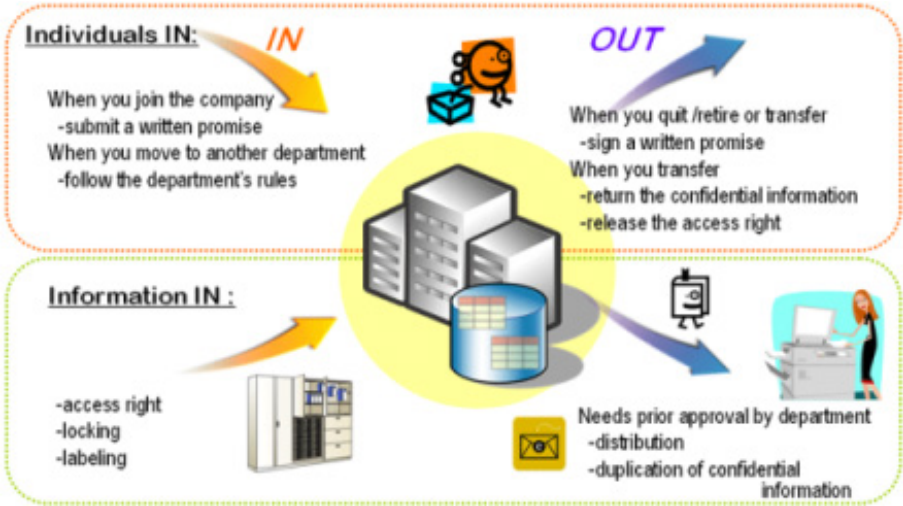


Image from ISMS text

Equipment: Continuous Improvement

We implement anti-theft, fire-prevention, and other security measures to protect locations where information is stored. Our facilities and equipment are kept under continual surveillance, and efforts are made to replace obsolete facilities and equipment with state-of-the-art ones. For R&D facilities that require advanced security, we implement a variety of security measures including the introduction of iris authentication for facility access control and the use of storage cabinets that can only be unlocked with an employee ID card.



Opening a locked cabinet with an employee ID card

Information Technology (IT): Protection Behind the Scenes

The most vulnerable point with regards to information security breaches is people. People can leak information by mistake and misuse information out of ignorance. IT systems provide ways to prevent such human errors.

1. **Measures to prevent data leakage from PCs**

We create a more secure environment by installing antivirus software, implementing biometric authentication, using data encryption, and more.

2. **Anti-spam measures**

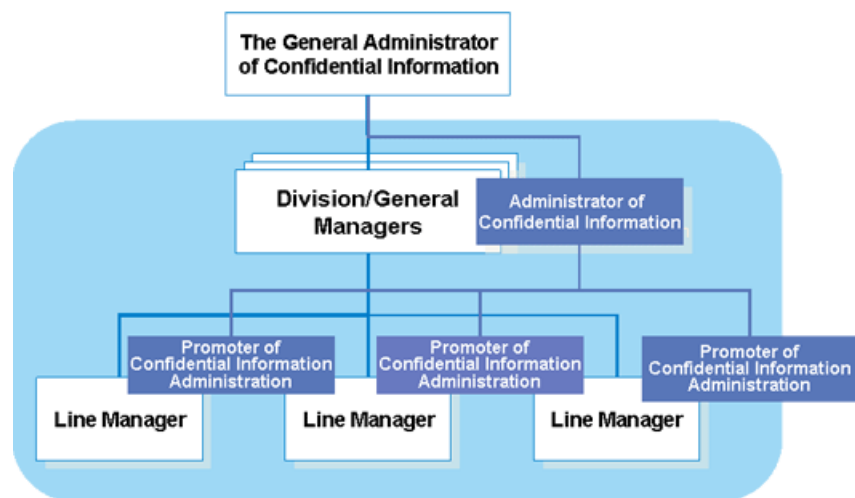
We have implemented an anti-spam filtering system, because spam mail is not only bothersome but also includes malicious mail that may cause data leakage and virus infection.

3. **Network connection device management**

To protect against unauthorized access and data leakage, we prevent unregistered PCs and related devices from being connected to the network.

Organization

Information security measures and policies are notified to the Group's headquarters, business headquarters and each Group company by the general administrator of confidential information. The head office checks the operations if they follow the rules and implements necessary reforms. In addition, there is an information security department or section for each of the Yokogawa Group's headquarters and business headquarters, as well as for each Group company. A PDCA, or Plan-Do-Check-Act, cycle is implemented to ensure information security activities are implemented smoothly.



Information security organization of Yokogawa Electric Corporation

The United Nations has put forward a set of ten principles, The UN Global Compact, relating to human rights, labor, the environment, and anti-corruption. On January 5, 2009, Yokogawa signed on as a participating company.

Kofi Annan, former Secretary-General of the UN, first proposed the Global Compact at the World Economic Forum in 1999; the UN officially launched it in 2000. Participating companies are expected to uphold and practice international standards relating to human rights, labor, the environment, and anti-corruption.

Today, Yokogawa does business around the world and its actions affect economies, societies, and the environment. Recognizing its role as a global company, it abides by international norms and actively works to address urgent international issues such as the environment and human rights.

⇒ Press release of January 7, 2009, announcing Yokogawa's participation in the UN Global Compact

Below are the ten principles of the UN Global Compact, followed by Yokogawa's efforts in each area:

Human Rights

Principle 1:

Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2:

make sure that they are not complicit in human rights abuses.

Yokogawa's Efforts:

⇒ Human rights policies

⇒ Extends CSR through the supply chain

⇒ United Nations Millennium Development Goals (MDGs)

Labor Standards

Principle 3:

Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4:

the elimination of all forms of forced and compulsory labor;

Principle 5:

the effective abolition of child labor; and

Principle 6:

the elimination of discrimination in respect of employment and occupation.

Yokogawa's Efforts:

- ⇒ Encourages the use of human resources with an emphasis on diversity
- ⇒ Employs the disabled
- ⇒ Maintains workplace safety and hygiene

Environment

Principle 7:

Businesses should support a precautionary approach to environmental challenges;


Principle 8:

tundertake initiatives to promote greater environmental responsibility; and

Principle 9:

encourage the development and diffusion of environmentally friendly technologies.

Yokogawa's Efforts:

- ⇒ Environmental management
- ⇒ Contribute to a Sustainable Future
- ⇒ Environmental equipment and instruments 

Anti-Corruption

Principle 10:

Businesses should work against corruption in all its forms, including extortion and bribery

Yokogawa's Efforts:

- ⇒ Anti-corruption and Compliance

Yokogawa Electric Corporation

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