2006

MHI Social and Environmental Report

CSR Report

MITSUBISHI HEAVY INDUSTRIES, LTD.

CONTENTS

Editorial Policy

This report was prepared by Mitsubishi Heavy Industries, Ltd. to describe the company's stance and initiatives, through its business activities, toward the development of a sustainable society. MHI hopes that the report will serve as a foundation for active dialogue with a broad spectrum of stakeholders regarding the company's business practices.
This year's report stresses the following items in particular.

- Making reference to the valuable opinions gleaned through last year's stakeholders meeting, messages from third-party commentators, and the results of our questionnaire survey, this year efforts were made to present the report in an easy-to-read and easy-to-understand format.
- Last year, the view was expressed at the stakeholders meeting that MHI should indicate its corporate vision. In response, this year's stakeholders meeting focused on the topic of energy and the company clearly indicated its vision for the future (see pages 9-13).
- In the Special Feature titled "Social Contributions through Business Activities" (pages 19-24), the company describes how its business activities are contributing to the development of a sustainable society. A special spotlight is trained on initiatives being taken to counteract global warming, an issue of particularly high social concern. A detailed presentation is given of the company's CO_2 recovery technology and achievements in wind and photovoltaic power generation (pages 14-18).
- A report is presented on the company's alleged violations of the Antimonopoly Act, including the reasons that led to them and measures to prevent a recurrence (pages 30-34).

Going forward, MHI intends to issue a "Social and Environmental Report" every year , and to continuously enhance the content of the report, to serve as an important communication tool.

Scope of this Report

- **Target organization:** The information contained in this report pertains to Mitsubishi Heavy Industries, Ltd. However, the company profile includes some consolidated data (on sales, number of employees, etc.).
- **Target period:** April 2005 through March 2006 (plus some information on activities after April 2006)

Date of Issuance

June 2006 (previous issue: June 2005)

Referenced Guidelines

Global Reporting Initiative's (GRI) "Sustainability Reporting Guidelines" (2002 edition); "Environmental Reporting Guidelines" (2003 edition) of the Japanese Ministry of the Environment.

Company Profile

Trade Name: Mitsubishi Heavy Industries, Ltd.

Foundation:	July 7, 1884
Establishment:	January 11, 1950
President:	Kazuo Tsukuda
Head Office:	16-5, Konan 2-chome, Minato-ku, Tokyo
Capital:	265.6 billion yen (as of March 31, 2006)
Employees:	32,627 (as of March 31, 2006)

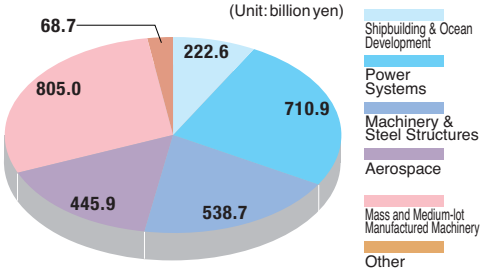
Statement of Accounts (Consolidated)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Orders received	2,640.3	2,424.9	2,480.9	2,662.8	2,722.8	2,942.0
Net sales	3,045.0	2,863.9	2,593.8	2,373.4	2,590.7	2,792.1
Operating income	74.8	78.6	115.3	66.6	14.7	70.9
Net income (loss)	–20.3	26.4	34.3	21.7	4.0	29.8
Total assets	4,236.6	3,915.2	3,666.8	3,715.3	3,831.1	4,047.1
Net assets	1,278.2	1,282.7	1,270.9	1,324.4	1,309.9	1,376.2

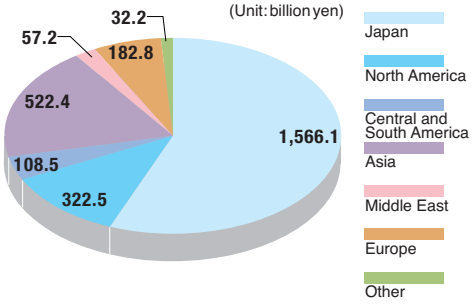
(Unit: billion yen)

Sales by Industry Segment and Region (Consolidated)

FY 2005 sales by industry segment



FY 2005 sales by region



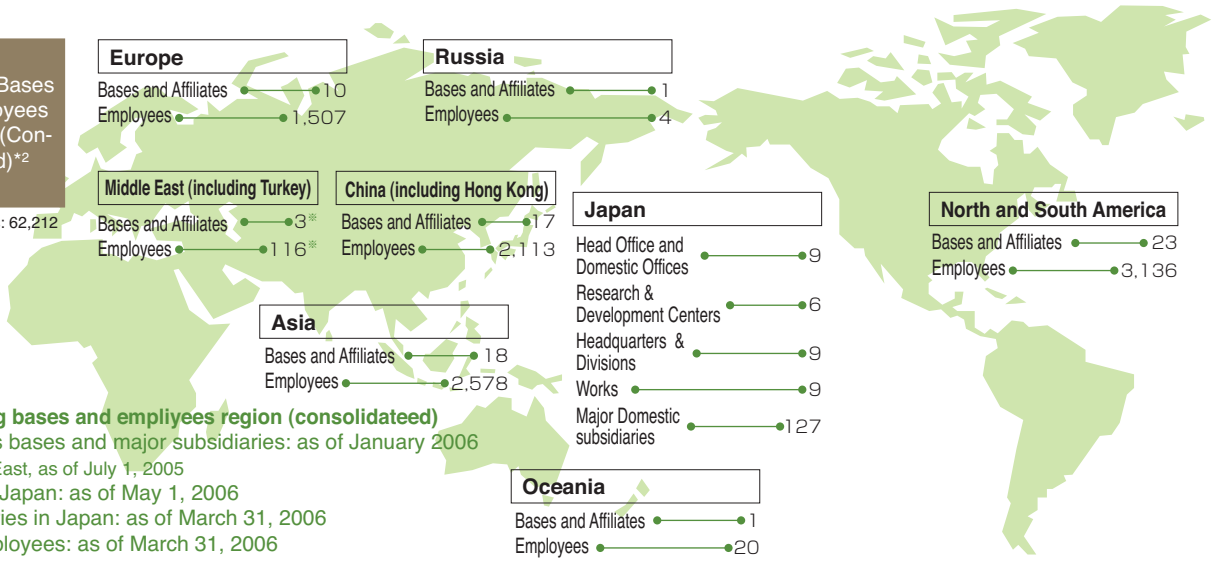
Relationship between segments and divisions (headquarters)

Segments	Headquarters and Divisions
Shipbuilding & Ocean Development	Shipbuilding & Ocean Development Headquarters
Power Systems	Power Systems Headquarters
	Nuclear Energy Systems Headquarters
Machinery & Steel Structures	Machinery & Steel Structures Headquarters*1
Aerospace	Aerospace Headquarters
Mass and Medium-lot Manufactured Machinery	General Machinery & Special Vehicle Headquarters
	Air-Conditioning & Refrigeration Systems Headquarters
	Paper & Printing Machinery Division
	Machine Tool Division

*1. The Machinery & Steel Structures Headquarters was newly created in May 2006 from the former Steel Structures & Construction Headquarters and Machinery Headquarters.

Operating Bases and Employees by Region (Consolidated)*2

Total employees: 62,212



*2 **Operating bases and empliyees region (consolidateed)**
Overseas bases and major subsidiaries: as of January 2006
※Middle East, as of July 1, 2005
Bases in Japan: as of May 1, 2006
Subsidiaries in Japan: as of March 31, 2006
Total employees: as of March 31, 2006

Message from the President

Through its business activities, MHI aims to fulfill its corporate social responsibility (CSR) - to secure the well-being of people everywhere.

Kazuo Tsukuda, President

In keeping with the spirit of our company creed, corporate activities matching the times form the core of CSR at MHI.

The basic spirit that defines corporate management at Mitsubishi Heavy Industries is in the main twofold: first, we pledge to make useful contributions to society through our business activities; second, we aim to conduct all corporate activities in good faith. This spirit is founded in the "Three Corporate Principles" shared by all Mitsubishi Group companies from the earliest days, as well as in MHI's own company creed formulated in 1970. In line with these principles and our creed, through the years, through fair corporate activities in compliance with all laws, MHI has provided technologies and products that support the social infrastructure, thereby responding to the trust of its customers and contributing to social development. In addition, as one of Japan's leading manufacturers, we consistently carry out activities of a high level in such areas as environmental protection and contributions to local communities.

Our current creed drawn up in 1970 is a contemporary version, in modern wording, of the spirit that has driven our company since its earliest days some 120 years ago. For 120 years, we have staunchly held to our management philosophy elaborated in the first provision of the creed – "We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society." – and we plan to retain this core focus going forward as well. However, while we will staunchly maintain this underlying spirit, the meaning imbued in these words is slowly changing. In former times, making contributions to society equated to developing Japan into a nation economically reliant on its industries. Today, in the 21st century, we see

our mission to be to respond to our customers' trust and contribute to a safe and rewarding life for people worldwide, undergoing continuous development while always seeking harmony between economic activities and the global environment.

We fulfill our social responsibilities in three broad ways.

Because corporate social responsibility spans a very expansive range of areas, the definition of CSR varies depending on the format of business, the specific region affected, etc. In keeping with the spirit of our company creed, at MHI we divide our responsibilities to society into three broad categories.

The first is "social contributions through company business." MHI develops technologies and products of remarkable variety in diverse fields that include power generation, transportation, the environment and industrial infrastructure; and in all cases what we aim for is to contribute to social progress. In other words, we seek, through our superior technologies and products, to respond to the trust of our customers and contribute to safe, secure and fulfilled lives for people worldwide – i.e. to contribute to social development – while pursuing harmony between economic activities and the global environment. This is the greatest value that MHI can provide to society, and one might even say it is the value behind the company's very existence. However, the definition of "social progress" changes over time, and for that reason we believe it is vital to maintain a solid understanding of society so as to make contributions that match the needs of each point in time.

The second category of CSR at MHI is "contributions to environmental preservation, protection of human rights and labor support." What is important in this regard, we believe, is to firmly recognize the demands of society transcending legal requirements, and to respond to those demands in good faith. Today, we are taking measures to boost our efforts in this respect in all areas of our corporate activities.

The third CSR category is "corporate governance and compliance." This category forms the underlying base of CSR as the foundation of our internal controls. Compliance, in particular, is absolutely indispensable if we are to win the trust of society and achieve sound development, and throughout the company we are taking steps in the area of compliance as a precondition to our continuing existence.

We believe that pursuing achievements in these three categories is our way of fulfilling our corporate social responsibilities.

We will continue to manufacture with pride and passion, to realize a secure future.

In my personal view, the "social progress" that is in demand today, in the 21st century, equates to a rewarding future in which people can live safe and secure lives. For MHI to contribute to social progress means for the company to contribute, through its outstanding technologies, to the realization of a future in which people can live safe, secure and fulfilled lives, while simultaneously pursuing harmony between economic activities and the global environment.

To name a specific example, I believe that MHI is one of only a few corporations that have the potential to respond on global scale in resolving the problem of global warming – the greatest environmental issue the world faces today.

In particular, with respect to the problem of reducing emissions of CO_2 given off during the combustion process, we have developed technology for recovering more than 90% of the CO_2 contained in the gas emissions from power and chemical plants, etc. Today, this technology is already in use at functioning plants both in Japan and abroad. We are also undertaking a variety of investigations toward achieving practical application of technologies for storing recovered CO_2 underground, among other possibilities.

To illustrate another example, if the combustion efficiency of all power plants reliant on fossil fuels worldwide could be improved by 1%, not only would it enable a vast reduction in the amount of CO_2 generated using oil or coal, it would also enable more prudent usage of the earth's limited fossil fuel resources. At MHI, we are working on a variety of initiatives in the energy field targeted at eliminating CO_2 emissions to the maximum extent possible. These include enhancing the efficiency of power generation itself, developing ever more efficient utilization of renewable energies such as wind, solar, geothermal and biomass power, and realizing safer generation of nuclear power.

My personal aspiration goes beyond achieving the target for reducing greenhouse gases set under the Kyoto Protocol; I would like to see the path laid down for the longer term, for the future of the earth 100 years from now. I believe that for that goal to be achieved, MHI has a mission to provide stable supplies of energy, to protect the global en-

vironment, and to continue providing the world with technologies and products that will enable the sustained development of our global society; and initiatives toward these ends will be carried on in the future.

MHI is committed to reducing the environmental burden as its contribution to developing a sustainable society.

In 1996, MHI set down a "Basic Policy" and "Action Agenda" on environmental matters in order to further promote its environmental protection activities on full scale as a way of enabling the development of a sustainable society. The Basic Policy lays down two fundamental policies regarding company-wide environmental initiatives: 1) the company itself will continuously work so as not to generate anything that will constitute a burden on the environment; 2) the company will develop and provide environmentally friendly products and technologies that will contribute to reducing environmental burdens.

In conjunction with point 1), based on the company's environmental targets for the medium to long term hoisted in 2002, today MHI is taking steps to reduce wastes, curb usage of chemical substances, conserve energy (as a way of cutting CO_2 emissions) and promote less use of fluorocarbons. Additionally, as initiatives in environmentally friendly management, we have pledged to issue this "Social and Environmental Report" on a continuing basis and to engage in "green," i.e. environmentally compatible, purchasing, among other initiatives.

Against the foregoing backdrop, we set a target of reducing CO_2 emissions from our own plants by 6%, against the level of 1990, by 2010. Unfortunately, in fiscal 2005 our emissions were actually 14.4% above the 1990 level, a circumstance attributable to increases in both production volumes and machinery installations. However, we are now redoubling our commitment to achieve the 6% reduction target, and going forward we will implement a wealth of measures company-wide toward that end, including conversion to alternative fuels and the adoption of energy-saving equipment.

In the years ahead, in line with our company creed we will continue to make important contributions to the resolution of environmental issues – a challenging task of global proportions – applying the comprehensive technologies we have cultivated over our 120-year history.

Fair and transparent business activities are indispensable for the company's continuing survival. We will continue to strive incessantly to restore the trust we have lost.

One item delineated in our corporate creed is our determination to strive for innovative management. In this regard, we believe that in order for MHI to develop its business while simultaneously fulfilling its social responsibilities, securing sound and transparent management while also striving for greater resiliency and efficiency is indispensable.

In this connection, in June 2005 we undertook a major review of our corporate governance practices, resulting in a significant reduction in the number of company Directors and an increase in the number of outside executive officers. Today, we have a true sense that those changes are producing excellent results in terms of vitalizing the Board of Directors, etc.

In addition, MHI has long been aware that conducting business activities in a fair and transparent manner in accordance with compliance principles is essential to the company's continuing existence, and based on this conviction we have undertaken a host of initiatives in this direction. For example, we have strengthened our in-house compliance structure through the establishment of a Compliance Committee and an in-company hotline dedicated to compliance issues, and we provide thorough education to our employees in matters relating to compliance.

These efforts notwithstanding, a number of incidents have occurred recently in which MHI has been cited for alleged violations of the Antimonopoly Act in multiple business dealings. These include indictment to the Tokyo High Court in June 2005 in conjunction with steel bridge construction orders from the Ministry of Land, Infrastructure and Transport. We deeply regret and apologize for this incident and for the broad social turmoil it has generated.

In response to the foregoing situation, in July 2005 we established an "Internal Audit Department" and "CSR Center" to fortify internal monitoring and strengthen our compliance promotion structure. A resolution was also passed by the Board of Directors pledging that the company will fully abide by the Antimonopoly Act and rigidly refrain from any and all acts of dubious soundness. Simultaneously, orders were issued to remind all employees to fully abide by the Antimonopoly Act at all times.

These initiatives were followed by the establishment, in August 2005, of an Order Compliance Committee. The committee, which includes experts from outside the company, was created with two aims, both targeted at ensuring propriety company-wide with respect to public works projects: 1) to discuss measures MHI can take to prevent violations of the Antimonopoly Act, and 2) to serve as a forum for monitoring, improving and guiding related activities in all sections of the company. Through the committee's deliberations, we are vigorously working to draw up an action agenda in sections involved in public works projects, clarify our structure for checking all particulars

of every project in advance, create and implement rules for periodically shifting personnel engaged in public works business, and strengthen our employee education concerning the Antimonopoly Act.

We understand full well, however, that the trust and confidence of society that MHI has lost owing to this series of incidents cannot be easily restored. As we move forward, the Directors and every employee will take heavily to heart the scale of the trust that we have lost, and we will remain cognizant that it is the task of each of us to fulfill MHI's corporate social responsibilities. With this in mind, we will approach our daily business dealings with humble sincerity.

I believe that my most important duty is, through the foregoing initiatives, to recover society's trust and confidence in MHI as swiftly as possible. I pledge to continue working incessantly for that purpose going forward.

CSR can be achieved only when there is dialogue with society. Today we engage in broad exchanges with our stakeholders.

What I believe we, as an entire company, must promote is dialogue with society. Only through dialogue, I believe, can MHI succeed in achieving its corporate social responsibilities.

So as not to slip into acting based solely on the logic of our own members, I believe we should give great weight – from the perspective of corporate governance also – to seeking exchanges of opinions with a diverse range of stakeholders outside the company and applying those external views proactively in company management.

In line with this stance, in 2005 we held our first stakeholders meeting. The meeting served as a venue at which we received valuable opinions on our business activities from experts in the environment, labor issues, compliance and philanthropy. In reflection of the views expressed at that initial session, in March 2006 we convened our second stakeholders meeting on the topic of energy, a mainstay of our business operations.

In February 2005, we also carried out, for the first time ever, a factory tour – of the Yokohama Dockyard & Machinery Works – by our shareholders. As the event was highly acclaimed by those who participated, we followed up with additional tours of our Nagoya Aerospace Systems Works in August 2005 and of the Kobe Shipyard & Machinery Works in March 2006. We intend to continue to provide tours of these kinds to all our factories nationwide in the years ahead.

We further believe that dialogue is vital not only with counterparts here in Japan but also with the global community, and based on that conviction in September 2004 we became a participating member of the United Nations Global Compact. Our intent is to study the views and information gathered broadly through this platform and to actively apply them in our company management.

Going forward, through active dialogues of the kind just described, we will remain keen to the fact that social views and arguments come in great variety, and we will employ that knowledge in seeking to transform MHI into the corporation that it should be.

On November 24, 2005, Mitsubishi Minatomirai Industrial Museum, opened in 1994 to foster exchange with the local community and to cultivate interest in science and technology, welcomed its one-millionth visitor to date. It gives us great pleasure that the museum has attracted so many visitors since its opening. In February 2006, we carried out a remodeling program, and in the future we will continue to pursue ways of attracting ever more visitors so that they too might become familiar with the latest achievements in science and technology that tend to escape notice in our daily lives.

We eagerly invite your frank opinions and requests pertaining to MHI and its initiatives.

MHI's Perspective on Corporate Social

Creed

- We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society.
- We base our activities on honesty, harmony, and a clear distinction between public and private life.
- We shall strive for innovative management and technological development from an international perspective.

Reason for Instituting the Creed

In Japan there are many enterprises with their own "creeds" which simply represent their management concept.

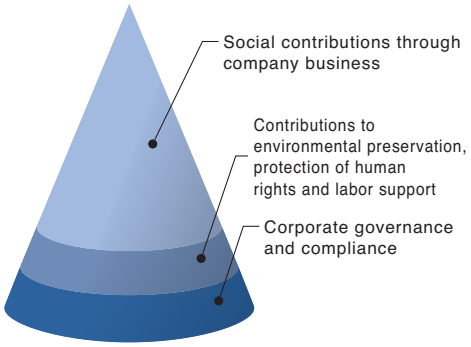
Mitsubishi Heavy Industries, Ltd. has a creed of this type, also. It was instituted in 1970 on the basis of the policy advocated by Koyata Iwasaki, president of Mitsubishi Goshi Kaisha in the 1920s, to indicate the essential attitude of the company, the mental attitude of employees, and the future directions of the company.

The reason for instituting the present creed is so that all of us can call to mind our one hundred years of tradition and strive for further development in the future.

Issued June 1, 1970

MHI's creed was established based on "The Three Corporate Principles" shared by all Mitsubishi Group companies from the earliest days. Today, more than 35 years after the creed was instituted, the challenges faced by the corporate sector in tandem with economic globalization have become highly diverse. In recognition of these growing challenges, MHI believes that the corporate philosophy and behavioral guidelines expressed in its creed have all the more value.

In the spirit of its creed, MHI pledges to continue making vital contributions to social development through the provision of technologies and products to support the social infrastructure.



Participation in the UN Global Compact

The "United Nations Global Compact" is a voluntary initiative initially proposed by Kofi Annan, the UN Secretary General, at the World Economic Forum at Davos in 1999. On that occasion, Mr. Annan called for business corporations and organizations worldwide to embrace and promote a set of principles, now ten in number, within their respective capacities. The Global Compact principles address four issues: human rights, labor, the environment and anti-corruption.

Today (as of April 2006), more than 2,900 companies and organizations are party to the compact. MHI became an active participant in 2004. In keeping with the compact's principles, the company is contributing in myriad ways that include the development and dissemination of technologies to protect the environment, support to areas that suffer natural disasters, and promoting the awareness of human rights.

The Ten Principles of the Global Compact

Human Rights	Principle 1:	Businesses should support and respect the protection of internationally proclaimed human rights ; and
	Principle 2:	make sure they are not complicit in human rights abuses.
Labour 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 labour;
	Principle 5:	the effective abolition of child labour; and
	Principle 6:	the elimination of discrimination in respect of employment and occupation.
Environment	Principle 7:	Businesses should support a precautionary approach to environmental challenges;
	Principle 8:	undertake initiatives to promote greater environmental responsibility; and
	Principle 9:	encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	Principle 10:	Businesses should work against all forms of corruption, including extortion and bribery.

Responsibility (CSR)

Basic Policy and Guidelines on Environmental Matters

MHI has established the following basic policy on environmental matters to enable the development of a sustainable society.

As clearly laid out in provision 1 of its creed – "We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society." – MHI believes its primary purpose is to contribute to society through its R&D, manufacturing and other business activities. Accordingly, in the performance of its business activities the company shall embrace the awareness that it is an integral member of society and, in all aspects of its business activities, it will strive to reduce burden on the environment and shall devote its comprehensive technological capabilities to the development of technologies and products that will protect the environment, as its way of contributing to the development of a sustainable society

To achieve its basic policy on the environment, MHI has set the following seven guidelines.

1. Accord high priority to environmental protection within company operations, and take steps company-wide to protect and enhance the environment.
2. Clarify roles and responsibilities regarding environmental protection by developing an organized structure to deal with environmental protection matters, defining environment-related procedures, etc.
3. Strive to alleviate burden on the environment in all aspects of company business activities – from product R&D and design to procurement of raw materials, manufacture, transport, usage, servicing and disposal – through pollution prevention, conservation of resources, energy saving, waste reduction, reuse and recycling.
4. Strive to develop and provide advanced, highly reliable, wholly proprietary technologies and products that will contribute to solving environmental and energy problems.
5. Strive continuously to improve and enhance environmental protection activities not only by fully complying with environmental laws and regulations but also, when necessary, by establishing, implementing and evaluating independent standards and setting environmental goals and targets.
6. In the performance of business activities overseas and exportation of products, pay full heed to impact on the local natural and social environments and strive to protect those environments; also, become actively involved in technological cooperation overseas in matters of environmental protection.
7. Take steps to raise environmental awareness among all employees through environmental education, etc., undertake activities to provide environment-related information to the public, and proactively make environment-enhancing contributions to society.

MHI Compliance Guidelines

Ⅰ Business activities

In addition to making social contributions through the provision of safe, high-quality products and services, MHI shall conduct its business activities responsibly and in compliance with all laws and propriety.

1. The company will consistently strive to provide products and services that are both safe and of outstanding quality.
2. In the performance of its business activities, the company will engage in free and fair competition in compliance with the Antimonopoly Law, and will comply fully with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors, the Construction Business Act, and all other relevant laws and regulations.
3. The company will abide by all laws and regulations, and never deviate from socially accepted practices, in matters involving gift-giving to or entertainment of civil servants and suppliers.
4. The company will conduct its business and tax accounting properly in accordance with all relevant laws, accounting standards and internal rules.
5. In the performance of its business dealings with other countries, the company will comply with all laws and regulations relating to import and export as well as all local laws and regulations.

Ⅱ Relationship between the company and society

MHI shall exist in harmony with society as a good corporate citizen, by making ongoing efforts to protect the environment, etc.

1. The company will abide by all environment-related laws and regulations and strive in every way to protect the environment.
2. The company will disclose information relating to its operations appropriately and in a timely manner.
3. The company will keep any and all political donations within the scope stipulated by law.
4. The company will respond firmly to any forces working counter to the interests of society.

Ⅲ Relationship between the company and employees

MHI shall secure a safe and healthy work environment for its employees; on their part, employees shall make a clear distinction between their work and private lives and execute their professional duties faithfully and in compliance with all laws and internal rules.

1. The company will abide by all labor-related laws and regulations, and will strive to secure a safe and healthy work environment.
2. All employees will comply with all internal rules, including work rules.
3. Employees will not engage in any discriminative behavior or sexual harassment.
4. Employees will handle company secrets appropriately, and never disclose such secrets without authorization.
5. Employees will not engage in unfair (insider) stock trading.

Expectations Held of MHI to Achieve Stable Energy Supplies Worldwide and a Sustainable Society

MHI held its first stakeholders meeting in 2004. On that occasion the view was expressed that MHI should engage in closer dialogue with society at large, stating clearly what vision the company embraces – particularly in the area of energy – and what role the company hopes to play. The second stakeholders meeting thereby focused on energy, marked by active discussions involving representatives from various related fields.

Views on the energy problem

Furuya: To begin, I would like to hear your views on MHI's "3Es" initiative. (See page 10)

Osawa: At Nippon Oil, we embrace the same thinking on the importance of achieving a balance between the 3Es. If I may speak from the vantage point of an energy company, today we are at a point in time when we must give serious consideration to energy supplies going forward. As far as the energy demand outlook goes, economic development in countries such as China and India is expected to push energy demand up by 2% each year. At the same time, however, oil production volumes are projected to peak in 2030.

New energy measures are needed to bridge this gap between supplies and demand. Whether such measures will involve nonconventional oil resources[*1] or renewable energies[*2] such as biomass, I'm not sure; but when one considers the sustained development within the global community not only of developed nations such as Japan but also the developing nations, the question of what approach should be taken to the development of what energies and technologies is one of extreme importance. At Nippon Oil, we have already started engaging in R&D of GTL (gas-to-liquid) and other bio fuels peripheral to our core business.

Taura: There is a growing international consensus that in order to avert serious impact from global warming it is necessary to curb the temperature rise after the Industrial Revolution to less than 2 degrees. To achieve that, moves must be launched to curb worldwide greenhouse gas emissions by 2020, and to reduce them by 40-50% by around 2030. Since 2030 isn't all that far into the future, Japan must work quite hard.

I think that the most important problem

with respect to energy is how to achieve this goal. We believe that more use should be made of renewable energies, and we feel that MHI too should attach greater importance to renewable energies.

Today, the corporate sector and society as a whole place too much importance on economic efficiency and give short shrift to social and environmental costs*3. What is needed is to always mull the balance and content of the 3Es in such a way that they will mirror proper social and environmental costs. In that respect, I would like to see MHI's 3Es vision be reflected in its business operations in more concrete terms.

Adachi: MHI puts stress on lending a cooperative hand to initiatives under way in Asia, including China. Clearly that too is important, but when we think about per capita greenhouse gas emissions, Japan and the other developed countries emit too much, and what's needed is for these countries to substantially reduce their emissions themselves. The reality, though, is that Japan's emissions have increased 7.4% since 1990. Policy measures need to be strengthened urgently.

We often hear the corporate sector bemoaning how products good for the environment don't sell well. So is the corporate sector able to get such items to sell relying solely on its own power? No, and that's because environmental costs are not appropriately reflected in market mechanisms. For that reason, energy tax-based fiscal reform and the launch of an environmental tax are extremely important. These have been realized in Europe as effective measures for reducing CO_2 while vitalizing the economy and employment. But in Japan, because of the compartmentalized bureaucracy of the various ministries and agencies – for example, the Ministry of the Environment and the Ministry of Economy, Trade and Industry – considering the issues is a slow-going process.

The business community too is adamantly opposed. In the UK, the leading role in realizing an environmental tax was played by leaders of the industrial community, those corresponding in this country to the top members of the Nippon Keidanren. What I would like is to see MHI lead the industrial community from a broad perspective. Also, MHI talks about participating in the development of nuclear power plants in Asia, but from the aspects of nuclear proliferation and the potential for such plants to become targets of terrorism, I think there would be less risk if MHI would instead promote renewable energies.

Kitagawa: When thinking about the energy problem, it's necessary to consider both scientific rationale and social rationale. Insofar as safe sustainability of the planet is concerned, social rationale is far from being achieved – that is to say, the situation is not yet such that everyone is willing to accept it.

Therefore, I would like to see MHI, which is in an important position with respect to energy and environmental technologies, forge a sustainable business model and set a precedent of its success. At the same

Jiro Adachi
Executive Director of the Japan Center for a Sustainable Environment and Society (JACSES) (NPO)

Nobuyuki Osawa
General Manager of the Research & Development Department, Research & Development Division, of Nippon Oil Corporation (ENEOS)

Masayasu Kitagawa
Professor of the Okuma School of Public Management at Waseda University

Kenro Taura
Executive Director of Kiko Network (NPO)

Kikuko Tatsumi
Board Member of the Nippon Association of Consumer Specialists

Takaaki Furuya
Group Manager of Technical Strategy Group, Technical Planning Department of Technical Headquarters at MHI

MHI's Position on Energy and the Environment: Pursuing "3Es" toward Realization of a Sustainable Society in the 21st Century

Problems relating to the global environment cannot, in essence, be resolved solely through the pursuit of reductions in greenhouse gases. The key lies in forging a social system that targets the simultaneous realization of "3Es" – ① energy security, ② environmental protection, and ③ economic efficiency in combination with sustainable economic growth – both domestically and internationally. An inseparable adjunct to the creation of such a system is the broad dissemination of technologies that contribute to both energy and environmental progress.

Today, Japan's technologies in energy diversification, efficient energy usage, and environmental protection, restoration and creation are especially in demand in Asia, where energy consumption is increasing exponentially. Within Japan itself, progress is being achieved toward revitalization at the regional level through the development of recycling-oriented social structures that make optimal use of renewable energies.

MHI believes it has a duty to play a central role in pursuing the 3Es as a way of achieving a sustainable society this century. Today the company is exerting every effort to develop and put into practical use the energy and environmental technologies that will make a powerful contribution toward that goal.

time, in order to realize its 3Es vision, I would also like to see MHI take the lead in activities directed toward achieving social rationale.

Tatsumi: Recently, there's been a tremendous increase in interest in eco-products. Until now, people have generally thought it was enough for a product to save on energy and so on when one is using it, but recently consumers have come to think about a product's environmental impact in broad terms: for example, how much energy it requires during the production process or the question of sustainability at the time of resource procurement. Insofar as manufacturing is concerned, energy has become another entity from the perspective of the environment. In that sense, I hope that MHI, which is involved in the manufacturing process from the standpoint of making facilities and equipment that generate energy, will disclose environmental information such as which energy-related facilities and equipment – wind or solar power systems, for example – it furnishes to corporate customers and the extent to which doing so can alleviate the environmental burden.

Regional revitalization through renewable energies

Taura: Today, we are forging various partnerships on the regional level and expanding our regional initiatives. In particular, we are devoting our efforts to the increased adoption of renewable energies. Because energy policies are considered to be national policies, local governments don't have their own energy policies. And without such policies, there is no progress in conserving energy. Regions can have their own energy policies, though, if they intend to promic their own local renewable energies and demand-side management. Undeniably, renewable energies do have their drawbacks, yet above all what is good about them is that they have the power to invigorate a region. With energy conservation comes the preconception that one should suppress oneself and "save, save"; but it's possible to give conservation a positive image. In that respect, I think MHI can be highly commended for the importance it attaches to regional communities, as illustrated by the company's promotion of use of biomass power in Shizukuishi, in Iwate Prefecture*4.

Osawa: From the perspective of regional vitalization, biomass energy indeed has tremendous potential. The movement toward "local production, local consumption" is spreading, taking biomass unique to a given region and converting it to energy for local usage, and I think we have to support such efforts. For example, one conceivable way is to take what until now has been locally dumped waste and use it as biomass material. I think we have to consider energies that are more firmly rooted in the local region.

Kitagawa: Biomass is indeed an extremely good example. Until now, MHI has been a top leader technologically speaking, but in the case of Shizukuishi it has become a leader in bringing together the Koiwai Farm and the local region. From now on, I would like to see MHI become more involved with local communities and serve in a coordinating role in regional management, as it has done in Shizukuishi.

Furuya: With the Shizukuishi project, it took an extremely long time to obtain a consensus among all the parties concerned: the local government, local businesses, etc. Nearly four years passed before the project got under way. As a

company that pursues efficiency, difficulties exist in some aspects, but I think the Shizukuishi project will become a model of a project that is undertaken with social acquiescence. Already, the next project of this kind is under way. When the aim is to revitalize the local region, unlike in cases where you simply say, "Use renewable energies. Save energy," we get a true sense of joining forces with the local people, and we too come away feeling joy at having done a good job.

Changing how the supply side thinks

Furuya: I'm very happy to hear how highly you all think of our initiative in Shizukuishi. Shizukuishi is the first project in the nation's "Biomass Nippon Strategy" to be led by the private sector. Judging from your comments today, however, it seems that this is not very well known. Many of MHI's engineers are frustrated to think that although the company is making contributions to society and the environment through its business activities – and not just in Shizukuishi – that fact is little known.

Kitagawa: Frustration of the kind you mention is a concept still embraced on the supply side. No one speaks of how Shizukuishi is good for the environment. The problem lies in how such information is conveyed to the public. The supply side has to change where it stands. I've long been involved in the local "Manifesto Movement," and in addition to steady efforts there is another important element that is needed in order to win social recognition. What we diligently strove for among ourselves but failed to achieve on broad scale, spread in a flash once the word "manifesto" was used in the general election campaigns. One general election, or the winning of one "Buzzword of the Year" award, outweighs 100 movements. "Biomass" is an extremely good word, and I think it has the potential to spread if it is properly presented.

Furuya: It's true that most of our projects have been for corporate customers and few of our products have directly reached the consumer, and for that reason our efforts to reach our customers' customers – in other words, the public – were inadequate. In that sense, a project like that at Shizukuishi can perhaps serve as a good opportunity for MHI, on the supply side, to change its way of thinking.

Tatsumi: In preparation for my participation in this meeting, I was given a large volume of materials, from which I came to recognize that MHI is truly thinking in various ways on our behalf. At the same time, I also harbored doubts as to how the company is conveying that fact to society. Energy especially, which, unlike manufactured goods and the like, is invisible, tends to be an entity out of the consumer's immediate range, and even if the public has a vague understanding that oil supplies might run short in the future, that knowledge isn't linked to our everyday behavior. For that reason, with respect to matters such as how households can save money through energy conservation or how the total environmental burden can be reduced through energy conversion and usage processes, I would like to see information provided, in words understandable to the consumer, that will more effectively impact everyday behavior, as a way of contributing to reduced energy usage by society as a whole.

MHI's responsibility to the planet, liaison with NGOs

Furuya: If you have any other things you would like to see MHI doing, please feel free to offer your opinions.

Taura: Forging a sustainable society requires major social reforms. And reforms are inevitably accompanied by "pain." I would like to see MHI thinking how to carry out its corporate activities based on a consideration of how such pain can be minimized for society as a whole.

Osawa: There are three things I would like to see from MHI from its position as a technology partner. Obviously, I look on MHI as a technological enterprise, and for that reason the first thing I would like is for MHI to contribute to the development of technologies that will enable use of nonconventional oil and other resources not used until now. Second, from the perspective of efficient energy usage, I hope that MHI will develop equipment that is highly energy-efficient: for example, gas turbines offering higher efficiency. Finally, I would like to see MHI developing CO_2 fixation technology. Collaborative development of these various technologies with MHI would be very welcome.

Adachi: Cooperation in initiatives at the regional level in the developing countries is also important, but in the ODA policies and projects that I have witnessed, there have been a considerable number of major problems. A project isn't good simply because it helps to prevent global warming; what's important is to achieve a proper balance, for example by listening to the opinions of local residents and NGOs. Also, with respect to liaison between the corporate sector and NGOs, insofar as domestic tax system reform is concerned too, instead of leaving everything to the public sector, it's important for there to be a threeway linkage to plan a well-balanced system in detail. We receive support from overseas corporate foundations, and we do so because we believe that there exist local information and knowhow of a kind that only an NGO can acquire, as well as policy proposals transcending compartmentalized bureaucracy barriers. We would like to see Japanese corporations engage in closer liaison with NGOs, offer them more support, and use NGOs in transforming their business targeted at the achievement of a sustainable society.

Special Feature

The Second Stakeholders Meeting

Tatsumi: I think it's extremely important to know what impact corporate activities are having not only at home but globally, what they aim to achieve with respect to environmental burdens, and what scope is being considered in forging a long-range vision. I think MHI, as a company that does business worldwide, bears a major responsibility toward the planet. I hope that MHI, as a corporation representative of Japan, will engage in activities of a kind worthy of respect not only at home but also abroad.

Kitagawa: In olden days, the highly successful merchants of Ohmi used to say that good business equated to business that was good in three ways: to the seller, to the buyer and to the public. I think that expresses, in an easily understandable nutshell, what CSR is all about. I hope that MHI will continue to carry forward its CSR with these sentiments in mind.

Furuya: I think that through today's meeting you have acquired an understanding of MHI's 3Es vision and its role. Insofar as how to carry out and win widespread adoption of that vision are concerned, however, much yet remains to be done, and today you have kindly pointed out specific points that should be improved. I believe that the points you have made today will lead to enhancement of MHI's CSR. Going forward, we aim to provide information not only to our direct customers but also to a broad range of stakeholders both at home and abroad and the general public. At the same time, we aim to take their views toward our activities to heart and to forge a structure that will reflect those views in our activities. Thank you very much.

***1. Nonconventional oil resources**
In contrast to conventional oil resources that are already in commercial use – oil, natural gas, etc. – nonconventional oil resources refer to resources that have not yet been developed for actual use. These include extra-heavy oil, oil sand and oil shale.

***2. Renewable energies**
Renewable energies are energies that make repeated use of the earth's natural powers. They include wind, solar and geothermal power and biomass.

***3. Environmental costs**
Environmental costs refer to the estimated monetary value of negative impact on the earth's environment resulting from corporate business activities.

***4. Biomass usage in Shizukuishi**
At a farm located in Shizukuishi, Iwate Prefecture, MHI has implemented a project whereby residue from a food-processing plant and livestock excreta are combined to produce methane gas for power generation.

MHI's Perspective on the Stakeholders Meeting

General Manager, General Affairs Department
Shigeo Okuyama

For MHI's second stakeholders meeting, we invited the views of the participants on the topic of energy.

Among the views offered were suggestions that a different way of thinking is needed on the supply side and that MHI does not do enough to provide information to society at large. These, and other views expressed during the meeting, will, I believe, be of extreme interest even to employees who are not directly involved in energy operations. Traditionally MHI has silently gone about the business of manufacturing and delivering products that contribute to society, but through the stakeholders meeting we came to sense that MHI is called upon to more actively provide information and pursue communication with society and to engage in activities that will cultivate even greater understanding.

In response to the high level of interest expressed in measures against global warming, in this year's report we describe our technologies for CO_2 recovary (pp. 14-15) and our initiatives for promoting wind and solar power as renewable energies (pp. 16-18).

Going forward, we intend to continue engaging in dialogue with our stakeholders on various occasions as we carry forward our initiatives in CSR management.

Transforming CO_2 into a Precious Resource

– Simultaneous Realization of Global Warming Countermeasure and Oil Production Enhancement –

Now that the Kyoto Protocol has taken effect, diverse measures are being taken and various technologies are being developed toward reducing CO_2, but none of these measures and technologies can be said to address the root of the issue. Efforts to save energy and boost energy efficiency aside, CO_2 emissions will persist so long as fossil fuels continue to be used. Against this backdrop, winning attention today is a technology whereby CO_2 in gas emissions is recovered and sequestered into oil fields, resulting simultaneously in increased oil production and fixation of the CO_2 in the ground.

CO_2/EOR Group,
Plant and Transportation Systems Engineering
and Construction Center

Masaki Iijima

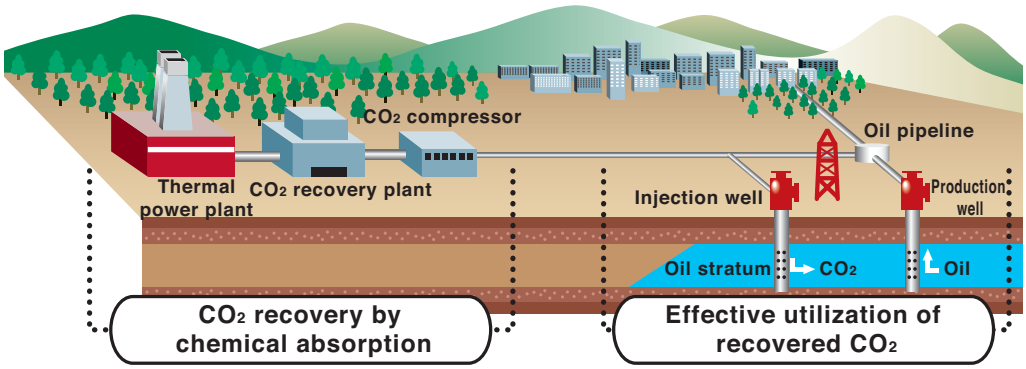
"As global warming gathers momentum, recovery of CO_2 from gas emissions and EOR are becoming the core technologies for coping with the problem. Today, more than competing against rival firms, MHI is striving to develop the market for these technologies."

From "craziness" 10 years ago, to "the ultimate technology" today

Masaki Iijima, head of MHI's CO_2/EOR Group, recalls how, back in 1992 or 1993, a European delegation on a fact-finding tour reacted to seeing MHI's test plant for separating and recovering CO_2 from gas emissions. "They said we were 'crazy'! In those days of heightening interest in global warming, the only countermeasures conceivable in Europe at the time were energy conservation and efficiency enhancement. Dealing with the problem on a scale such as this was thought to be impossible." Subsequently, however, alongside nuclear power generation, CO_2 separation and recovery came to be seen as the ultimate technology. In July 2006, verification testing got under way toward the realization of a commercial system enabling recovery of CO_2 from coal-fired power stations.

CO_2 recovery systems perform an important mission in preventing global warming

The impetus behind commencement of development of this technology was a proposal on joint development received from Kansai Electric Power Co., Inc. in 1991. According to Iijima, "We knew how the recovered CO_2 could be put to use. In tandem with decreased volumes of excavated crude oil, we recognized that CO_2 could be effectively used



CO_2 recovery and utilization scheme
CO_2 is recovered by chemical absorption from the gas emissions from power generating plants and factories. It is then fed by pipeline, etc. to an oil field for effective use in EOR or used in a urea plant.

in conjunction with future developments in EOR[*1]. We were also convinced that the development of CO_2 recovery equipment would lead to fundamental measures for dealing with global warming. We were a bit concerned, however, about the considerable length of time it would take to develop and perform verification testing on such a system."

Development of the CO_2 recovery system began with the basic research. After repeated tests of all kinds, researchers developed a solvent known as "KS-1" that enabled efficient absorption of CO_2. "Its development was more a feat of strength than a product of wisdom," Iijima says, but he recalls clearly the feeling the research team had that they were on to something. "There were no competitors, and we acquired the patents for the technology with ease." The team's sustained efforts led to delivery in 1999 of a CO_2 recovery system installed at a urea production plant in Malaysia. As more than 60% of all CO_2 is discharged by power plants and large-scale factories, the recovery systems employing KS-1 perform an important mission.

After achieving the technology, next came development of a market

Interest in applying recovery technology to EOR, which is said to boost crude oil production by 50%, declined in the 1990s because oil prices remained low and the situation was no longer ripe for the oil-producing nations to make investments. But Iijima says researchers continued to proclaim the merits of EOR on the grounds that "if the problem of depleting oil supplies were not addressed now, it would be too late." The tide then began moving in that direction after the arrival of the new millennium, when a prominent British geologist warned that production of crude oil would peak within five years, and thereafter begin declining irrevocably.

Reality, however, demands that both CO_2 recovery and usage are economically rational. "Technologically, we achieved a position of superiority," Iijima states. "From now on, what's important is developing the market." Thus recognizing the change under way in the social picture, Iijima started his energetic peregrinations to develop the market. His activities set the oil companies, which had optimistically opined that there would be no need to worry about oil supplies for 20 years, mulling measures to cope with their plight. As a result, in December 2005 MHI formed a business tieup with Royal Dutch Shell[*2]. and inaugurated a project targeted at implementing EOR in the Middle East.

Now that his long years of effort are bearing fruit, Iijima says he has a true sense of emerging success. "Recovery of CO_2 from gas emissions and its application to EOR can be commercialized only in a time span of 10-20 years. MHI is a company that thinks in measures of 10, 20 and 100 years." And that ability to get involved in products that demand such long time spans, Iijima states, is what sustained him.

***1. EOR (Enhanced Oil Recovery)**
EOR is a technology to boost oil output. CO_2 is injected into the oil stratum, resulting in lower viscosity that enables a higher rate of oil recovery.

***2. In a tieup with Shell EP International Limited**


Urea production plant in Malaysia, where recovered CO_2 is effectively used as raw material for producing urea


This CO_2 recovery plant in Fukuoka has the capacity to recover 283 tons of CO_2 per day.

Wind Power Generation: Conquering Fierce Wind Changes through Technology

Among the renewable energies gathering attention today is wind power. But at times the wind can be totally calm, while at others it bares its fangs as a brutal storm that can cause buildings to collapse. Also, because even in "normal" times wind changes direction and speed in an instant, many unique technologies are demanded to achieve wind-powered generation. MHI, through its proprietary technologies, is vanquishing typhoons, lightning strikes and other severities of nature, and in the process is contributing to the prevention of global warming.

Wind Power Generation Group
Nagasaki Shipyard & Machinery Works

Masakazu Miyazu

"The source of my passion toward wind turbines is the fact that today's wind turbines still leave a lot of development ahead before we achieve the ideal turbines."

Wind turbines born from the DNA of advanced technological development

At MHI's Nagasaki Shipyard & Machinery Works, there exists an ingrained culture of technology development targeted at the future, as illustrated by the development here of geothermal power generation technology in 1966. Another product of this technological culture is wind power generation. In 1982, before there was general interest in global environmental issues, MHI introduced Japan's first commercial wind turbines, with an output of 300 kW. They employed recycled helicopter blades that could still adequately serve their intended function. The initial response in-house was that funds could not be directed into a development project in which recycled parts would be used, on the grounds that such a project had no future as a viable business.

At the time, wind power generation had just been launched in Europe, and MHI's 300 kW wind turbines were the largest available for commercial use. The company's technologies won high acclaim overseas, leading to steady growth in orders that enabled MHI to capture the leading spot in this market in the 1980s and into the early 1990s. In the latter half of that decade, however, while the overseas market for wind turbines expanded significantly, so too did the number of companies entering the competition. The result was that MHI saw its global share slowly recede, culminating in 2002 with total deliveries of only 30 MW, down sharply from 223 MW the previous year.

In 2002 the Wind Power Generation Group was established at the Nagasaki Shipyard & Machinery Works for the purpose of developing wind power generation into a commercially viable area of business. Masakazu Miyazu was selected to serve as the Group's leader. He recalls with frankness how, upon assuming his post, he was "shocked" to see the pathetic situation of the balance sheet in wind power operations. But, he says, "I felt it was my duty to carry on the DNA of advanced power generation technology at Nagasaki." Based on that thinking, Miyazu determined to narrow down the core of operations from seven wind turbines of various outputs and types to development of just two: one being 1,000 kW turbines boasting high reliability and execution, the other a large-scale model in the 2,000 kW class capable of responding to future demand. Even in his selectivity and concentration, Miyazu applied the "DNA" of advanced power generation technology. "Rather than merely eliminating the other models," he explains, "we probed how complaints lodged against those other models could be addressed through technology, and then applied those new technologies to the two new models."

Development of Japan's largest wind turbine

The issues needing to be addressed with wind turbines, which do battle against nature, are infinite, however. The steam turbines Miyazu had been involved with for many years operate under uniform conditions, but with the natural environment no conditions are uniform. Moreover, as wind turbine

installation sites become increasingly widespread, their respective natural environments come to differ greatly. Miyazu defines the direction for technology development in the design phase. "You have to set the conditions of the natural environment yourself," he notes. "And then you have to design a wind turbine to withstand those conditions." He also describes his intense personal passion for technology: "What I am attracted to is the fact that today's wind turbines still leave a lot of development ahead before we achieve the ideal turbines." At the same time, he remains cognizant of the great significance his undertakings have for society as a whole. "Unless we expand our usage of renewable energies," he relates, "our lives can't continue as they are. Society's need for wind turbines is becoming quite strong."

Miyazu's firm resolve and his passion toward wind turbines reaped success in 2005, when MHI's record of deliveries worldwide reached 280 MW, with MHI taking the 3rd-place share of the U.S. market (at 7%) and 1st place in the domestic market (near 40%). In addition, Miyazu's team has developed Japan's largest wind turbine, featuring an output of 2.4 MW; verification testing got under way in Yokohama in January 2006. The new turbine incorporates technologies that overcome Japan's meteorological conditions – typhoons, lightning strikes, fluctuations in wind direction and speed. Miyazu believes that its development will add significant momentum to the spread of wind power generation in Japan.


Three blades are attached to this framework.


Nacelles, installed atop the turbine tower, contain the generator, rotor, etc.

Photovoltaic Power Generation Utilizing Renewable Energy Available in Unlimited Supply

For a long time, converting sunlight – an inexhaustible resource available on earth – to electrical energy was a dream of mankind. Today, as the problem of global warming becomes ever more serious, realizing that dream is a task of increasing urgency. MHI, through development of proprietary technologies, is opening a new page in photovoltaic power generation through improvements in conversion efficiency, cost reductions and the ability to maintain stable supplies.

Refusal to give up set the path toward solving the problems

In February 2006, MHI launched construction of a factory to mass-produce microcrystalline-silicon (μc-Si) tandem photovoltaic (PV) cells[*1]. The new cells have 50% higher power generation capacity than the company's conventional amorphous type modules[*2]. Sales of the new cells will get under way in April 2007. Today, crystalline PV cells form the mainstream; but with the emergence of the new thin-film cells – which offer advantages such as minimal energy requirement in the production phase, reduced use of silicon and outstanding power generation cost merits – MHI expects to increase its share in the PV cell market and to boost momentum in winning adoption of the new modules.

Getting to this promising stage was not smooth sailing all the way, by any means. "At one point I thought that, based on the experience to date, achieving commercial viability would be difficult even if we continued to pour money into development," confides Hiromu Takatsuka. "I thought we'd be better off withdrawing altogether." Those were Takatsuka's sentiments back in 1998, the year he took up his position as head of the Development Division, which at that point had already been engaged in full-scale development of PV cells for four years. Takatsuka had personally experienced the difficulty of developing new products: as a young boiler engineer in a thermal power plant, he had participated in a project whose failure

***1.** Microcrystalline tandem PV cells can absorb a broader range of wavelengths of solar light (from UV to infrared) than amorphous PVs, thereby enabling enhanced power-generating efficiency. As there are no constraints in availability of raw materials, stable supplies of the cells are anticipated.

***2.** Amorphous PV cells offer outstanding power generation characteristics under high temperatures, and their angle of inclination has virtually no impact on the generated output. They generate more power per annum than crystalline PVs of identical rated output.

Solar Cell Power System Department,
Nagasaki Shipyard & Machinery Works

Hiromu Takatsuka

"When I was young, I experienced a development project failure that nearly cost me my job. But that experience enabled us to achieve commercial viability of PV cells in a short time."

nearly cost him his job. As far as the PV cell project was concerned, however, voices in-house proclaiming that the project was doomed to failure actually inspired him. He declared his team would not withdraw. "This project is still a work in progress. We have to keep going until we see where it will take us," he said at the time. "But we'll set a tentative target date for commercialization of one year and a half. Until then, we won't issue any progress reports." From that point, he and his team tackled the many issues that had to be overcome to achieve commercial viability.

Propelling the energy revolution forward by applying results achieved in the laboratory directly in the factory

Those issues were twofold: ① to create a thin film of amorphous silicon on a glass substrate using a plasma CVD system, and ② from this thin film, to form a broad surface area at 10 times the conventional speed. Unlike development that takes place in a laboratory, achieving commercial viability demands resolution of these issues plus the achievement of a product of low cost; otherwise it will not be widely adopted. "We were fully familiar with plasma CVD systems as we had already developed a system for liquid crystals," Takatsuka says, "but stringent quality control was demanded since film quality in this instance differs from LCs. Also, although we were able to achieve small surface areas at high speed, it was all too apparent that in the case of broad surface areas, owing to problems such as unevenness of the film, development in the laboratory was clearly different from achieving mass production in the factory."

Despite these hurdles, Takatsuka was convinced that overcoming them was absolute necessary to win acceptance of photovoltaic power generation worldwide. That conviction, in combination with the zeal of the technology team to develop the proprietary technologies required, led to the achievement in 2000 of the world's first high-speed, high-quality film deposition technology. And that in turn enabled the successful manufacture of the world's largest amorphous solar cell (1.4 × 1.1m). In 2001, construction began on a dedicated factory, and production got under way in 2002.

Today, in his position as chief engineer in charge of the Solar Cell Power System Department, Takatsuka devotes his energies to the attainment of expanded production and adoption of solar cells. "Development of solar cells is indispensable as a measure to combat global warming," he asserts. "Their development is a noble business serving to benefit all mankind." In reflection of those sentiments, the entrance to the solar cell factory bears the slogan that embodies Takatsuka's conviction embraced back in 2001: "Let's create a revolution in energy through amorphous solar cells!" Today, that revolution is gathering further momentum with the mass production and marketing of tandem type cells, turning Takatsuka's aspiration into a reality.

Development of solar cells is by no means completed, however. MHI continues to develop technologies that will enable even further achievements in product price reductions, primarily through enhancement of conversion efficiency, as it proceeds in devoting its efforts toward the adoption of solar cells worldwide.

"Let's create a revolution in energy through amorphous solar cells!"

Development of see-through solar cells allowing passage of sunlight

Special Feature

Social Contributions through Business Activities

Through its business activities, MHI fulfills its corporate social responsibility (CSR*) in order to promote the well-being of people worldwide.

The corporate philosophy of Mitsubishi Heavy Industries, Ltd. has not changed since the founding of the company roughly 120 years ago. Today, as then, the company is determined to contribute to society through the manufacture and provision of products.

From the company's beginnings, the Mitsubishi Group has shared the basic concept of "Three Corporate Principles." The spirit of these principles continues to live in the company creed. The first item in that creed is: "We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society." This is MHI's CSR.

Some 120 years ago, through the manufacture and provision of products MHI contributed to the industrialization and cultural enlightenment of Japan. Today the company's mission is to work toward realizing safe, fulfilled lives for all people around the world. Above all, through its technologies and products MHI pledges to make every effort to reduce the global environmental burden, as its contribution to the world.

Going forward, through the manufacture and provision of products MHI will also seek to improve communication with people around the world. Additionally, the company will continue to propose and provide products and ideas that will aid in building a prosperous society – in order to ensure that our human society continues for many years to come, and that we leave this beautiful earth to the children of the future.

That is MHI's role.

*CSR Corporate Social Responsibility

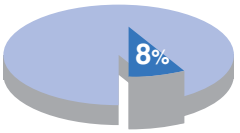
Shipbuilding & Ocean Development

Availing of today's most advanced technologies backed by more than a century of experience in shipbuilding, MHI develops and constructs a diverse array of environmentally friendly large-scale ocean-going vessels and marine products.

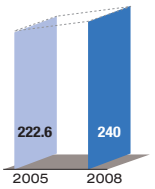
Shipbuilding & Ocean Development Headquarters

Medium-term business plan (2006–2008)

Percentage of total order receipts (2008)



Net sales (unit: billion yen)



Power Systems

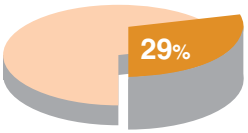
MHI provides high-efficiency power systems that enable delivery of clean energy to ensure safe and comfortable living environments for people worldwide.

Power Systems Headquarters

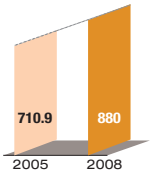
Nuclear Energy Systems Headquarters

Medium-term business plan (2006–2008)

Percentage of total order receipts (2008)



Net sales (unit: billion yen)



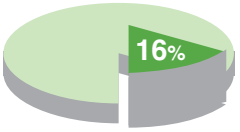
Machinery & Steel Structures

MHI supplies a wealth of products that form integral components of social infrastructure. The company also provides a wide array of products and technologies developed to protect the earth's environment and support the development of a sustainable society.

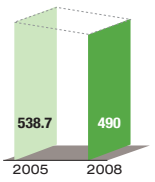
Machinery & Steel Structures Headquarters

Medium-term business plan (2006–2008)

Percentage of total order receipts (2008)



Net sales (unit: billion yen)



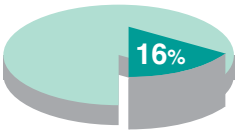
Aerospace

MHI supports Japan's national defense base through the provision of related equipment of all kinds, including fighter planes. It also makes an important contribution to social development through state-of-the-art products including civilian aircraft and space systems.

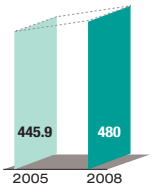
Aerospace Headquarters

Medium-term business plan (2006–2008)

Percentage of total order receipts (2008)



Net sales (unit: billion yen)



Mass and Medium-lot Manufactured Machinery

MHI contributes to social development and alleviation of environmental burdens through its provision of a plethora of products that form the industrial infrastructure.

General Machinery & Special Vehicle Headquarters

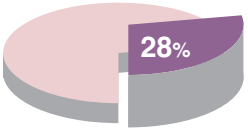
Air-Conditioning & Refrigeration Systems Headquarters

Paper & Printing Machinery Division

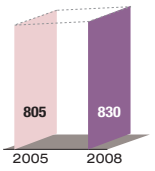
Machine Tool Division

Medium-term business plan (2006–2008)

Percentage of total order receipts (2008)



Net sales (unit: billion yen)



Recent Business Developments

- On October 1, 2005, Mitsubishi Heavy Industries Parking Co., Ltd. was established, taking over responsibility for the development and production of mechanical parking facilities.
- On December 12, 2005, through conversion of preferred shares MHI acquired common stock in Mitsubishi Motors Corporation, thereby making the automaker an equity-method affiliate.
- Effective January 1, 2006, operations relating to remediation of contaminated sediments (raw sewage treatment), sewage treatment, waste collection facilities, refuse vacuum-sealed conveyance systems, marine anti-biofouling equipment, etc. were transferred to Mitsubishi Heavy Industries Environment Engineering (MJK).
- Effective April 1, 2006, operations relating to bridge structures (bridge products for the domestic market, including coasting structures, bridge inspection vehicles and other road maintenance vehicles, facilities and equipment; excluding bridge products for export) were transferred to Mitsubishi Heavy Industries Bridge & Steel Structures Engineering Co., Ltd.
- On May 1, 2006, the Machinery & Steel Structures Headquarters was newly established by integrating and reorganizing the former Steel Structures & Construction Headquarters and Machinery Headquarters.

Shipbuilding & Ocean Development

Shipbuilding & Ocean Development Headquarters

MHI develops and builds a broad array of large-scale ships and marine products friendly to the environment. In the area of shipbuilding, in response to voluminous demand for new ships, particularly as an outgrowth of economic development in China, MHI is engaged in the construction of new ships of high added value that offer both outstanding efficiency and minimal environmental burden.

The company's involvement in developing and manufacturing vessels to transport the world's energy resources – (Moss and membrane type) liquefied natural gas (LNG) carriers, liquefied petroleum gas (LPG) carriers and very large crude carriers (VLCC) – and new-generation container ships to support distribution needs has given birth to many new technologies: for example, contra-rotating propellers and support systems ensuring safe navigation. MHI vessels also feature an automatic ballast exchange system to prevent the spread of harmful marine organisms and double-hull fuel tanks to prevent accidental oil spills.

MHI's product offerings in the area of ocean development cover a broad spectrum – from marine structures relating to offshore oil and gas operations, to manned research submersibles.

LNG carriers

LNG carriers reduce NOx and SOx emissions as a result of their ability to use boil-off gas as the propulsion fuel. They also feature an automatic ballast exchange system that prevents the spread of harmful marine organisms and double-hull fuel tanks to prevent accidental oil spills.

Deep-sea drilling vessel *CHIKYU*

CHIKYU is a riser drilling type scientific research vessel developed to drill into the earth's mantle for the first time in human history. From a water depth of 2,500 meters, the ship is capable of taking continuous core samples down to 7 kilometers into the seabed. CHIKYU is being used to study the mechanism of earthquakes and microorganisms that inhabit the earth's crust.

Power Systems

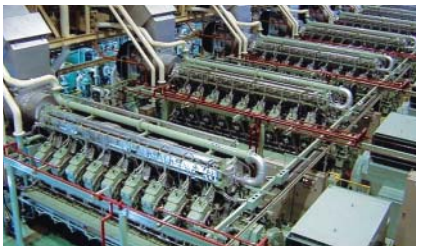
Power Systems Headquarters

MHI supports safe and comfortable living for people worldwide through its provision of clean and highly efficient energies. In response to the need to counter global warming and meet expanding demand for fossil fuels, the company actively pursues the development of new energies and new technologies targeting energy conservation. Specific initiatives under way include wind power generation and photovoltaic cells (see pages 16-18) and geothermal power generation, and MHI is also striving toward developments in integrated coal gasification combined-cycle (IGCC) technology and fuel cells. Meanwhile the company is also directing its efforts into high-temperature, high-efficiency gas turbines and into gas turbine combined-cycle (GTCC) power plants that boast the world's highest level of generating efficiency; the latter systems use gas emissions and waste heat to generate electricity.

Gas turbine combined-cycle (GTCC) plants

GTCC plants offer approximately 20% higher operating efficiency than conventional thermal power plants. They incorporate highly efficient gas turbines that make outstanding use of exhaust gas energy, exhaust boilers and steam turbines.

MACH-30G gas engine

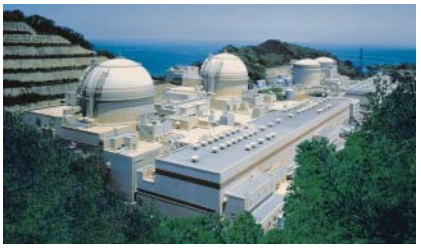


The MACH-30G is a gas engine offering the benefits of low NOx and dust emissions. Its micro pilot ignition system, featuring a common rail, in combination with its independent optimal control of cylinders and Miller cycle thin-combustion technology, together enable the world's highest level of generating efficiency.

Nuclear Energy Systems Headquarters

Nuclear power is garnering attention today as an energy that releases no CO_2, a major cause of global warming. MHI, as one of Japan's leading comprehensive manufacturers of nuclear power plants, has more than 40 years of experience in nuclear plant construction and maintenance, and today it applies this abundant experience in providing a gamut of highly reliable products and services: from basic plant planning and design to manufacture, construction, maintenance and repair. The company constructed 23 of the 55 nuclear power plants currently in operation in Japan, and today it is also actively participating in nuclear fuel cycle operations and working toward the development of high-temperature gas-cooled reactors (HTGR) of modest size. In addition, MHI supplies major replacement components to nuclear plants worldwide, including 16 reactor vessel heads and 22 steam generators.

Nuclear power plants



Because it produces no CO_2 emissions, nuclear power generation enables provision of energy while complying with the need to counter global warming.

Replacement steam generators

Steam generators are core components of pressurized water reactors (PWR). They generate steam from the heat generated by a reactor, to drive a turbine. To date MHI has supplied 22 replacement steam generators to Belgium, the United States and France.

Machinery & Steel Structures

Machinery & Steel Structures Headquarters

In a quest to realize fulfilled lives for people worldwide, MHI provides numerous products to serve as social infrastructure, and at the same time it provides a kaleidoscope of technologies and products targeted at protection of the global environment and the creation of a recycling-oriented society.

In conjunction with social infrastructure development, MHI is active in numerous infrastructural segments that support day-to-day living and industry: for example, urban transport systems, electronic toll collection (ETC) systems and large-scale LNG storage tanks. Among initiatives geared toward protecting the environment, the company provides refuse and other waste treatment facilities, flue-gas desulfurization systems capable of removing near 100% of the sulfur dioxide (SO_2) contained in flue-gas emissions from power plants, and PCB (polychlorinated biphenyl) contaminated soil remediation systems. In addition, the company has achieved a technology enabling highly efficiency recovery of CO_2, a leading contributor to global warming, from gas emissions (see pages 14-15); the recovered CO_2 is used to make urea fertilizers, etc. Research is also collaboratively under way toward developing technology for storing CO_2 underground.

Flue-gas desulfurization system

This system removes 99.9% of the SO_2 contained in the exhaust from power plants and other production facilities. MHI's proprietary liquid column tower technology not only enables outstanding desulfurization performance but also facilitates maintenance with its simple internal structure, thus enhancing customer convenience.

100% low-floor LRV

The 100% low-floor light rail vehicle (LRV) features a floor surface that is entirely flat. It is also remarkably close to the road, thereby enabling elderly and handicapped passengers to get on and off effortlessly, ensuring comfortable travel. The LRV incorporates MHI's achievements in noise and vibration reduction and provides a smooth, comfortable ride throughout the entire range of speeds.

Aerospace

Aerospace Headquarters

MHI supplies a wealth of unique products to the aerospace industry, a segment that is expected to mark robust growth in demand worldwide in the coming years.

In the area of defense equipment, the company applies its state-of-the-art technologies to provide diverse offerings, including fighter planes, to meet the nation's evolving defense-related needs, consistently maintaining and strengthening Japan's defense industry and technology base in order to ensure the peace and safety of all citizens.

In the civilian aircraft segment, MHI is engaged in the development and production of main wings constructed from composite materials to be used – for the first time worldwide – in a large commercial aircraft: the next-generation Boeing 787 passenger jet. Presently the wings are in testing toward the aircraft's scheduled entry into service in 2008.

In the space systems segment, MHI supported the successful launches of the H-IIA rockets No. 8 and No. 9. Today preparations are going forward toward the privatization of all related services, from manufacture to launch.

Boeing 787 passenger jet

Use of composite materials in the Boeing 787's fuselage structure results in outstanding fuel efficiency. The new aircraft has already attracted robust orders from airlines worldwide, and in the home market All Nippon Airways and Japan Airlines have decided to add them to their fleets. MHI is in charge of the development and production of the main wings, a key component, and also participates in engine development.

H-IIA launch vehicles

In fiscal 2005, Japan successfully sent up two H-IIA launch vehicles. The No. 8 vehicle successfully placed an advanced land observing satellite (ALOS), nicknamed "Daichi," into orbit, and the No. 9 vehicle did likewise for a multi-functional transport satellite (MTSAT-2).

Mass and Medium-lot Manufactured Machinery

General Machinery & Special Vehicle Headquarters

MHI contributes to society with a wide array of general machinery and special vehicles. The company's engines drive machinery of every kind and function as the core component of power generation systems. Its turbochargers boost the combustion efficiency of passenger car engines. Its forklift trucks and distribution equipment bring greater efficiency to logistics and support convenient, fulfilled lifestyles. In developing and manufacturing all of these products, MHI consistently strives for environmental friendliness through achievements in energy conservation, fuel efficiency, low noise and vibration, etc.

GRENDiA forklift trucks

GRENDiA is the name of MHI's new-generation forklift trucks equipped with a wealth of new features. These include low-emission engines that have already passed tightened emission requirements in Japan, the U.S. and Europe, and an original operator protection system.

Ultra fuel-efficient gas engine for cogeneration systems

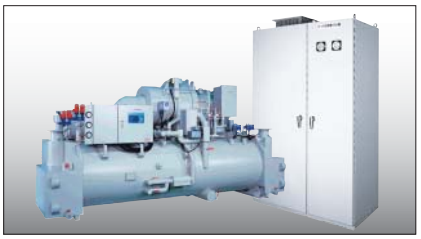
MHI, working in collaboration with Osaka Gas Co., developed a 380 kW gas engine for cogeneration systems boasting the world's highest fuel efficiency in the 300 kW class: 41.5%. It brings together the essence of MHI's engine and turbo technologies.

Air-Conditioning & Refrigeration

MHI contributes to the realization of more comfortable living environments by providing a broad spectrum of air-conditioning products: from residential use air-conditioners, commercial use air-conditioners, automotive thermal systems and transport refrigeration units to centrifugal&absorption liquid chiller and applied refrigeration use machinery. The company also addresses social needs concerning energy conservation and environmental protection, and reflects its endeavors in these areas into both the development process and final products. MHI provided a district cooling and heating system for seven high-rise towers, including the company's own Head Office building, in the Shinagawa Grand Commons district of Tokyo. The initiative was certified by NEDO as an "Environmentally Friendly Energy Community Project".*

* Projects of this kind are promoted by the New Energy and Industrial Technology Development Organization (NEDO) to encourage development of efficient district energy systems based on large-scale cooling and heating systems.

Centrifugal liquid chiller



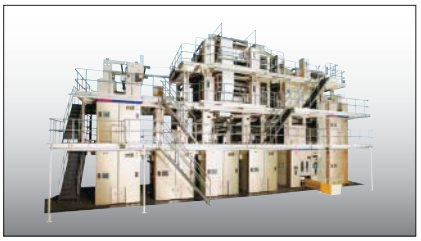
This is the first centrifugal liquid chiller to feature inverter control using a high-speed processing unit. Optimal control matching actual operating conditions enables the world's highest partial-load efficiency: COP 17.8. Compared to standard equipment, this system enables up to 30% energy savings in summer and 65% in winter.

Paper & Printing Machinery Division

As an expert in paper and printing machinery, MHI responds to a wide array of requirements, both at home and broad, with products that include pulp and paper machinery, paper converting machinery and printing machinery. MHI is the only company capable of providing the complete spectrum of paper-related technologies, and today it continues to probe the development of advanced technologies enabling efficient use of precious paper resources.

MHI's printing machinery lineup includes the DIAMONDSTAR, a newspaper offset press that achieves the remarkably fast operation-rated printing speed of 90 thousand copies per hour. In 2004, the DIAMONDSTAR won the Japan Society of Mechanical Engineers (JSME) Medal for New Technology. With the DIAMONDSTAR, MHI is responding to the demand of today's newspaper publishers to swiftly deliver the latest news, in high definition and brilliant color, to their readers.

DIAMONDSTAR newspaper offset press



The DIAMONDSTAR not only boasts a very fast printing speed (90 thousand copies per hour), but also provides for high-definition, full-color printing of the news. In addition, it helps trim running costs by reducing both paper waste and power consumption by roughly 20% compared to conventional presses.

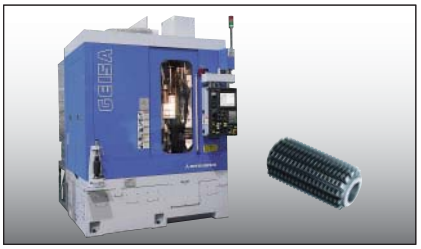
Tandem Perfector sheet-fed offset press

MHI's Tandem Perfector is the world's only printing press configured to completely print the front side of the sheet before printing the reverse side in a single pass, without having to the sheet. The TP provides stable, high-speed printing while also reducing print doubling, fan-out and waste. Because waiting time for one side to dry is eliminated, the TP also makes a big contribution to faster delivery.

Machine Tool Division

MHI contributes to industrial development and social progress through provision of machine tools, the "mother machines" of the industrial world. R&D is carried out from the dual perspectives of both manufacturer and user, with a constant focus on realizing what the user requires. The company also strives to manufacture products that will contribute to environmental protection and energy conservation. Fruits of that determination are the GE15A hobber and the "Super Dry" hob cutter, the world's first totally dry gear hobbing system.

GE15A "Super Dry" hobbing system



The GE15A is a totally dry gear-hobbing system that uses no cutting oil whatsoever. Compared with conventional wet type systems, it provides 2.5 times faster cutting speed, 10 times longer tool service life, and consumes 20% less energy. Its revolutionary technology thereby both eases environmental burdens and helps reduce production costs.

Management

CSR Challenges, Targets and Progress

To carry out its corporate social responsibilities (CSR), MHI pursues initiatives on many different fronts. By making known the challenges the company faces, the targets it has set, and the progress it is making toward their achievement, the company aims to help develop a sustainable society while maintaining active communication with the public.

Area of activity	Item	Medium- or long-term target	Progress through fiscal 2005	Evaluation
Management	**Pursuit of total compliance**	Raise compliance awareness	Starting in fiscal 2003, compliance promotion training has been carried out every year. To monitor the training results, since fiscal 2004 30% of all employees, randomly selected, are surveyed to evaluate their compliance awareness.	
Business performance (consolidated basis)*	**Orders received**	3,000 billion yen in fiscal 2008	2,942.0 billion yen	
	Net sales	3,000 billion yen in fiscal 2008	2,792.1 billion yen	
	Operating income	120 billion yen in fiscal 2008	70.9 billion yen	
	Ordinary income	100 billion yen in fiscal 2008	50.3 billion yen	
Society	**Promotion of safe working environments**	No fatal accidents on the job; fewer serious accidents than in the previous year	An occupational health and safety management system is in operation company-wide to ensure workers' safety on the job. Despite these efforts, in 2005 the company saw an increase in the total number of accidents, including two that resulted in fatalities.	
	Promotion of workers' health management	Lower absentee rate for injury or illness than in the previous year	Despite various measures taken to promote employees' mental health, prevent lifestyle-related diseases, etc., the target went un-	
	Promotion of employment of the handicapped	Attainment of the statutory employment rate for the handicapped (1.80%)	1.70% as of June 1, 2005	
	Promotion of proper balance between work and family life	Under a two-year plan (April 1, 2005 to March 31, 2007), attainment of the following levels in child-rearing leaves taken by employees (in line with guidelines issued by the Ministry of Health, Labour and Welfare): · Males: at least 1 employee taking a child care leave during the period · Females: a leave-taking rate above 70%	During the first year of the plan (April 1, 2005 to March 31, 2006), the targets were virtually achieved.	
	Social contributions	Continuation of activities contributing to society, emphasizing trust-based relationships with local communities	Diverse activities making social contributions were conducted within the various headquarters, divisions and works.	

* The company revised its medium-term business targets (consolidated) in April 2006.

 ···Target achieved or progressing on schedule  ···More effort required  ···Target not yet achieved

Area of activity	Item	Medium- or long-term target	Progress through fiscal 2005	Evaluation
Environment	**Reduction in waste generation and emissions**	By 2010, reduction in total waste generation to 170,000 tons (more than 20% below 1992 level): to be achieved through conservation of resources and reduced purchasing of materials	Total emissions: 147,000 tons 31.9% reduction from 1992 level	
	Reduction in landfill waste disposal	By 2005, zero landfill waste disposal at more than half of the works – and at all works by 2010: to be achieved through reuse and recycling	Zero emissions achieved by Yokohama Dockyard & Machinery Works, Takasago Machinery Works, General Machinery & Special Vehicle Headquarters, Nagoya Guidance & Propulsion Systems Works (2006) and Air-Conditioning & Refrigeration Systems Headquarters (2006); progress under way at Paper & Printing Machinery Division and Machine Tool Division	
	Elimination of equipment using PCB	By 2010, total elimination of lighting ballasts and high-voltage equipment using PCBs	Progressing on schedule; registration (at Japan Environmental Safety Corporation) of equipment using high concentrations of PCBs completed ahead of schedule	
	Reduced emissions of organochlorides	By 2005, reduction by 95% (from 1996 level) in atmospheric emissions of dichloromethane, trichloroethylene and tetrachloroethylene, and zero emissions by 2010: to be achieved through total management and reduced releases of organochlorides	Atmospheric discharge: 18.2 t 93.1% reduction from 1996 level	
	Reduction in CO_2 emissions	By 2010, 6% reduction in CO_2 emissions (from 1990 level): to be achieved through reduction measures at all production plants	CO_2 emissions: 540,000 t 14.4% above 1990 level	
		By 2005, adoption of solar power systems capable of generating 400kW	Total capacity: 480kW (including 10kW added in fiscal 2005)	
	Reduction in fluorocarbon* usage	By 2010, total replacement of potentially ozone-depleting HCFCs with 100% ozone-safe HFCs, etc.	Emissions in fiscal 2005: 19.2 t Efforts under way toward total elimination in fiscal 2010	
	Environmental management system	Ongoing renewal of ISO14001 certification for all domestic works	ISO14001 certification successfully obtained by all 15 domestic production sites (divisions, headquarters, works); renewals processed on continuing basis	
	Database for environmentally friendly management	By 2005, development of a database on the company's environmental burden	Study carried out on online tabulation of environmental performance data, environmental accounting, etc.	
	Promotion of environmental accounting	Continuation of environmental accounting; completion of online tabulation system by 2005		
	Ongoing issuance of environmental reports	Continuing issuance; ongoing content enhancement	Issuance of new "Social and Environmental Report" incorporating CSR-oriented content.	
	Promotion of "green purchasing"	Proactive purchasing of environmentally friendly products, based on the company's own guideline	Green procurement rate: 93.4%	
	Promotion of environmentally friendly design	Establishment of a working group to develop in-house standards for environmentally friendly product design	Formulation of "Basic Guideline on Production of Environmentally Friendly Products"	

* Fluorocarbons: chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs)

Management

Corporate Governance

MHI consistently works to promote fair and sound management rooted in full abidance of the law. In a quest to develop its business operations as well as fulfill its social responsibilities, the company continuously strives to improve its management structure, and it also assiduously pursues enhanced transparency in management by providing timely and accurate information both to its shareholders and society at large.

Management Structure

The Board of Directors is responsible for decision making on all important management issues as well as supervision of MHI's business activities. The duties executed by the Directors in turn are checked by the Board of Statutory Auditors. To strengthen management and supervisory functions, today two of MHI's 17 Directors and three of its Statutory Auditors were selected from outside the company.

An Executive Committee has also been established to deliberate important matters relating to business execution. Deliberations are conducted as a team centered on the President – a system that enables more apposite management decisions and business dealings.

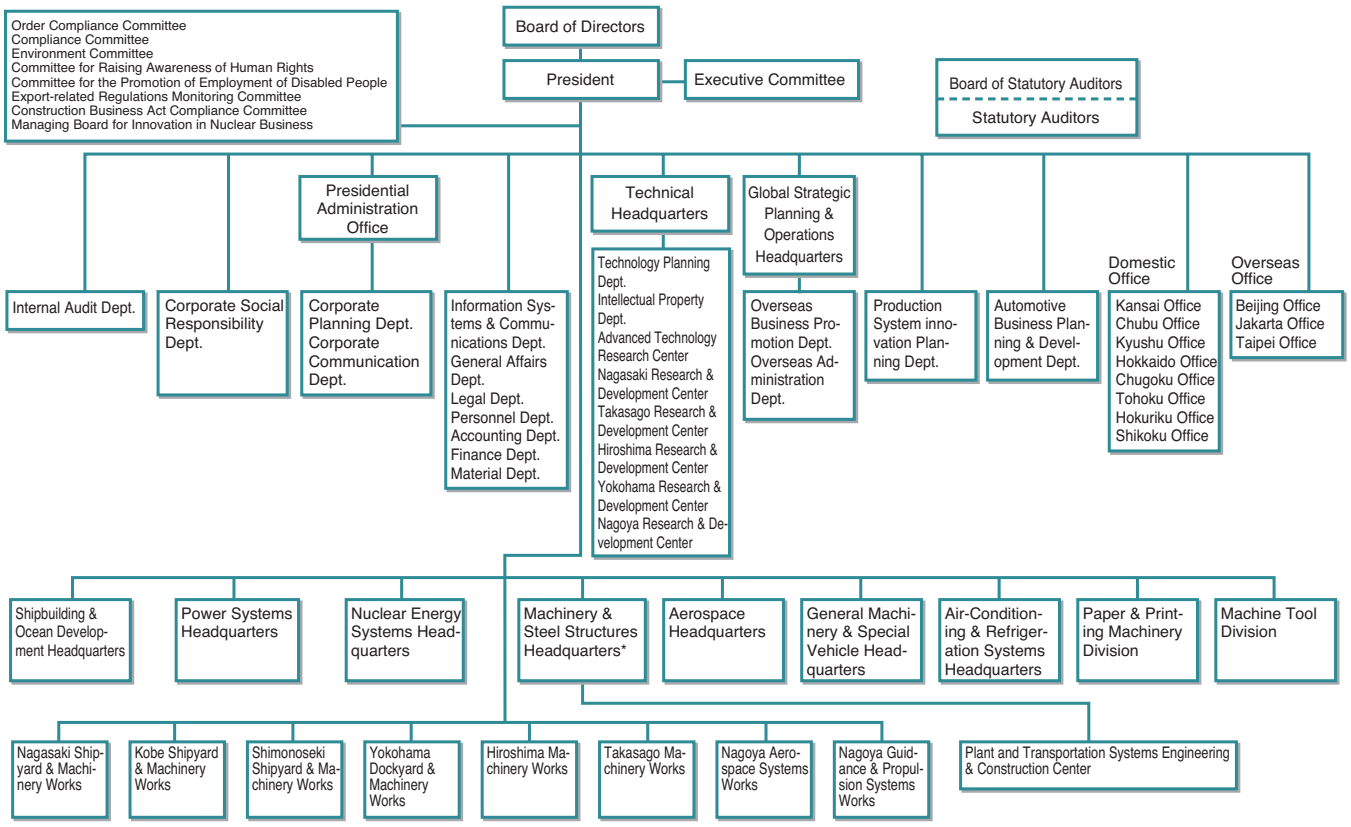
In June 2005 MHI revamped its corporate governance structure in a quest to make company management more sound and transparent and to enhance efficiency and flexibility. The major changes effected were an increase in the number of outside Directors, a reduction in the number of Directors, shortening of the Directors' appointed terms in office, and the launch of a system of Executive Directors. As a result of these modifications, today the company is pursuing stronger supervision of the Board of Directors and clarifying the respective roles and responsibilities of the Directors – who are in charge of rendering all decisions on matters of importance to company operation as well as supervising company operations in general – and the Executive Directors, who are in charge of executing matters of business.

Auditing System

At MHI, Statutory Auditors, functioning in compliance with the auditing policies, allocation of duties, etc. decided within the Board of Statutory Auditors, continuously check the performance of the Directors in the execution of their business duties. They do so by ① attending all important meetings, including those of the Board of Directors, the Executive Committee and business planning sessions, so as to achieve timely and accurate understanding and checking of management's executive performance; and ② checking and confirming compliance with laws, and checking the status of improvements to and execution of internal controls. To support and facilitate the work carried out by the Statutory Auditors, an Internal Audit Department has been created with its own dedicated staff.

The Statutory Auditors also work closely with the company's independent accounting auditors. They not only engage in regular exchanges of information and opinions with these counterparts, but also receive auditing reports, attend audits by the appropriate auditors, etc.

Organization Chart (as of October 1, 2006)



* The Machinery & Steel Structures Headquarters was created in May 2006 from the merger of the former Steel Structures & Construction Headquarters and Machinery Headquarters.

Enhancement of Internal Control System

In accordance with its underlying philosophy to promote socially responsible management based on its company creed, through the years MHI has continually taken steps to improve its structural framework in ways that will enable the company to respond appropriately to the various risks that surround it. Securing compliance based on resolutions of the Board of Directors is one example.

In July 2005 MHI established a new organization, the "Internal Audit Department," for the express purpose of performing internal auditing in order to achieve enhanced monitoring of the company's business execution functions. By working closely with the Statutory Auditors and with sectors in charge of compliance, steady progress is being made in strengthening the company's internal auditing system.

In May 2006 the Board of Directors adopted a basic policy for forging a new system of internal controls. The underlying philosophy of the system is to conduct business activities fairly and faithfully, abiding by all laws and placing importance on social norms and corporate ethics, with the Directors taking the lead in striving to attain these objectives. Going forward, the internal control system will be continuously improved to enable MHI to implement socially responsible management all the more vigorously.

The flow chart below is a graphic depiction of MHI's corporate governance structure. It offers an overview of the company's current internal control system and describes the relationships that exist between decisions rendered at ordinary general meetings of shareholders, Board of Directors meetings and meetings of the Board of Statutory Auditors.

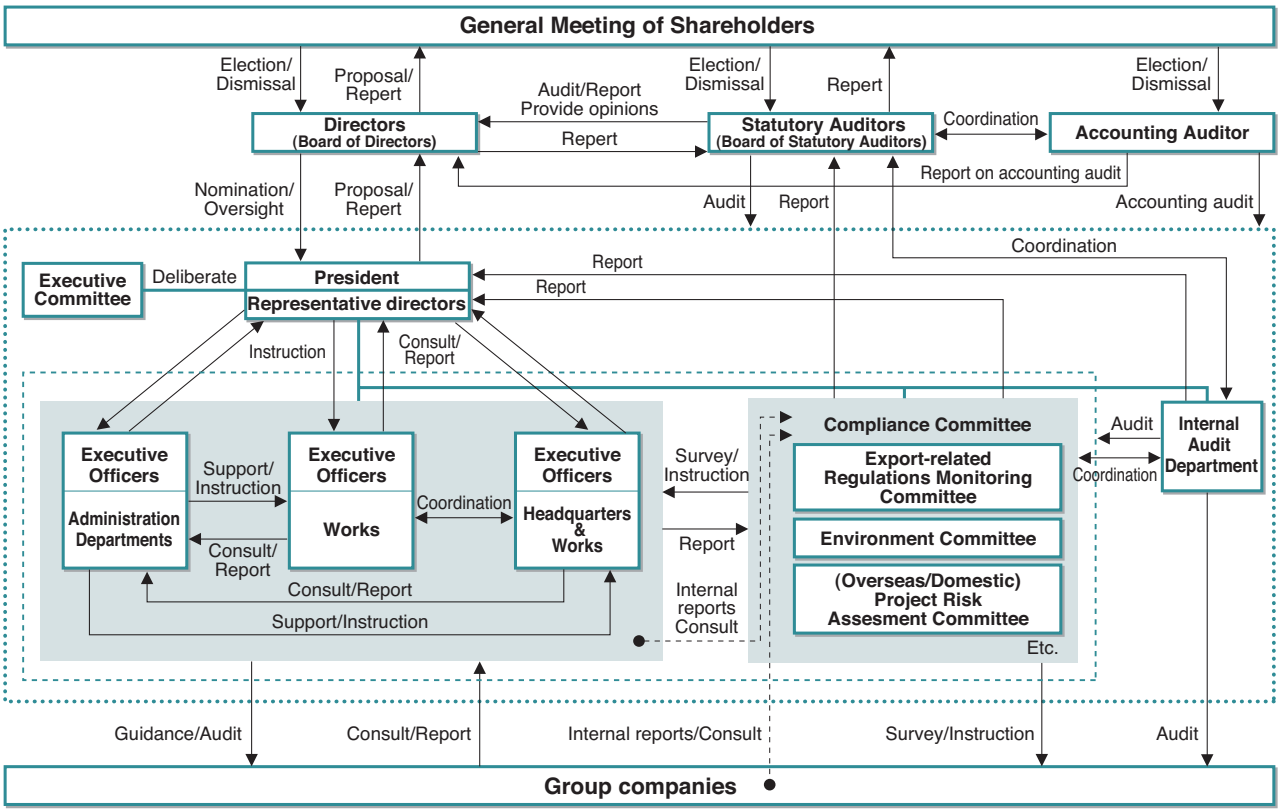
Production System innovation Planning Department

In the manufacturing industry, the key to competitive strength lies in the ability to create outstanding products, and amidst the intensifying competitiveness of today's market, securing that ability is a management issue of critical importance. At MHI, a variety of challenges need to be addressed at the sites where manufacturing is performed; these include, on one hand, the pressing need to cope with alacrity to today's rapid advances in product sophistication and diversity and, on the other hand, the challenge presented by an aging workforce and distortion in the age breakdown of the company's employees.

In light of the foregoing situation, in April 2006 MHI founded a new "Production System innovation Planning Department" to rethink the company's manufacturing capabilities and strengthen the work sites where manufacturing is carried out. The new department is positioned directly under the aegis of the company President.

In its role as the "control tower" overseeing innovation in manufacturing throughout the company, the Production System innovation Planning Department sends its staff directly to the various manufacturing works. Through dialogue with on-site employees of every rank, they proceed to shed light on specific challenging issues, and when those issues are common throughout the company or issues that are difficult to resolve within the plant itself, the Production System innovation Planning Department sets to resolving such issues, one by one, working in liaison with the related sectors. Specifically, the department strives to fortify manufacturing capabilities by cultivating and strengthening human resources, promoting the transfer of expertise and skills, making sure that key equipment is state-of-the-art, revamping business processes, etc. In addition, by carrying out the foregoing activities on a continuous basis and keeping the PDCA (plan-do-check-act) cycle securely in motion, the department aims to pursue innovations and forge capabilities in manufacturing that will provide solid support to company management.

Corporate Governance Structure (including internal control system)



Management

CSR Promotion

To carry out activities ensuring that the company will fulfill its corporate social responsibilities, in 2005 MHI established a new "CSR Center." The new entity is already taking aggressive steps to promote CSR.

CSR Promotion Structure

In its quest to promote CSR-based management, MHI has established separate committees specifically to oversee matters such as compliance, environmental protection and respect for human rights. Today these committees are advancing measures devised to achieve their respective objectives. In July 2005 a "CSR Center" was newly established to promote CSR-based management company-wide through liaison and coordination between these various committees and related departments as well as the pursuit of information sharing. In addition, in December 2005 a "CSR Liaison Conference" was founded to set down both short-term and longer-term targets on the various topics being addressed.

Meeting of CSR Liaison Conference

Committee Activities

Compliance Committee

The Compliance Committee was established in May 2001 to promote fair and faithful business activities wholly in compliance with all laws and regulations. The committee is directly responsible to the President and is chaired by the Director in charge of compliance. The committee members are the general managers of MHI's various administrative departments. Today, the committee is preparing a broad palette of measures to promote compliance company-wide.

Environment Committee

The Environment Committee was created in 1996 to clarify the company's initiatives in protecting the environment. Each year the committee plans and proposes environmental measures to be carried out company-wide and sets the direction for that term. It also promotes and follows up on the environmental protection plans prepared annually by the respective divisions, headquarters and works.

Committee for Raising Awareness of Human Rights

The Committee for Raising Awareness of Human Rights was founded in 1992 to foster correct understanding of and contribute to the resolution of human rights issues, in conformity with the spirit of respect for human rights. The committee works to raise human rights awareness, formulates basic policies for training in matters impinging on human rights, draws up and implements the training programs, coaches in-house instructors in carrying out the training, and liaises and coordinates with related administrative institutions.

Committee for the Promotion of Employment of Disabled People

The Committee for the Promotion of Employment of Disabled People was established in 1992 to proactively expand employment opportunities for the disabled. The committee's duties include formulating basic policies relating to employment of the handicapped, drawing up and implementing related plans, raising in-house awareness of problems affecting disabled people, acquiring and distributing pertinent materials, and liaising and coordinating with relevant administrative agencies and organizations.

Export-related Regulations Monitoring Committee

The Export-related Regulations Monitoring Committee was set up in 1987 to oversee export management, a topic of grave importance to a company like MHI that exports a broad variety of products. Each department has one member in charge of related matters, and once each month all members gather at the committee meeting. The meetings serve as a venue for evaluating each department's progress in providing guidance and supervision of the company's export management system. Through these consistent efforts, MHI is doing its very best to ensure full compliance with all export-related laws and regulations.

Construction Business Act Compliance Committee

The Construction Business Act Compliance Committee was created in October 2003 to spread knowledge relating to Japan's legal framework for conducting proper business in the construction industry. Since the committee's inauguration, instructors from the Organization to Promote Proper Dealings in the Construction Industry have been invited to conduct seminars on the Construction Business Act at the company's main works.

The committee office also serves as an in-house window for consultation pertaining to construction legislation. In addition to securing uniformity in legal interpretations, the office consults with the authorizing government agencies concerning particularly complex matters. The committee also provides support toward boosting efficiency in operations relating to the Construction Business Act through development of a system with functions for monitoring appropriate allocation of const-ruction engineers, etc.

Order Compliance Committee

See page 31.

Managing Board for Innovation in Nuclear Business

See page 50.

Countermeasures against Asbestos

In light of the injurious effects asbestos is now known to have on health, in July 2005 MHI conducted an investigation of asbestos usage in the company's products and factory buildings. The investigation revealed that asbestos has been used both in products and factories, and the company immediately responded by drawing up, in August 2005, a policy for dealing with asbestos based on the principle of not allowing company operations to result in any harm attributable to asbestos. In line with this policy, today MHI is working to fully ensure health and safety where asbestos has been used, to develop asbestos-free product substitutes, and to implement effective countermeasures in factory buildings and other facilities where asbestos exists. In these ways, the company is striving assiduously to prevent all harm from asbestos not only to employees but to all customers using MHI products and residents in areas surrounding the company's manufacturing plants.

Compliance

Compliance

Although MHI has implemented various measures to promote compliance through the years, in 2005 the company was indicted for alleged violations of the Antimonopoly Act in relation to bridge construction orders. Today, the entire company is making concerted and thorough efforts to ensure that a situation of this kind never occurs again.

Alleged Violations of the Antimonopoly Act, and Measures to Prevent a Recurrence

Rigged Bidding for Bridge Construction

In May 2005, an MHI employee was arrested on suspicion of violating Japan's Antimonopoly Act (through rigged bidding) in relation to bridge construction orders from the Ministry of Land, Infrastructure and Transport and the Japan Highway Public Corporation. Following an investigation by the Tokyo High Public Prosecutors Office, in June 2005 MHI was indicted for its dealings with the Ministry of Land, Infrastructure and Transport, and in August the company and its representative in charge of sales were indicted in conjunction with their involvement with the Japan Highway Public Corporation. In September, Japan's Fair Trade Commission recommended that MHI be barred for its part in these events.

The company truly regrets that the situation has come to this, and it offers deepest apologies to society in general and to all parties concerned. It is also highly unfortunate that the various measures devised by the company to promote thorough compliance ultimately proved unable to prevent this situation.

Through the years, MHI has continuously taken initiatives to provide education in legal and compliance matters as deemed necessary for each hierarchical level of the company's employees, whether administrative (general managers), managerial (deputy managers and section heads), or general employees (supervisors and rank-and-file employees). The company has also prepared manuals on observance of the Antimonopoly Act and has conducted seminars and study groups on this topic. In May 2001, a Compliance Committee was established directly under the aegis of the President. Among the committee's undertakings to date have been the establishment of a dedicated contact point for reporting unlawful or inappropriate activity (June 2001), preparation and distribution of company compliance guidelines (September 2001), preparation and distribution of compliance guidelines for employees in managerial positions (March 2002), holding of compliance seminars (for roughly 4,700 managers) and compliance promotion training programs (annually since 2003, for all employees), conducting compliance awareness surveys (annually since 2004), releasing compliance-related information company-wide (since January 2005), and clarification of penalties for compliance violations and acquisition of compliance pledges (April 2005). Furthermore, the Compliance Committee has audited all divisions by checking on their performance of business including matters of compliance.

However, the events that led to the alleged violations of the Antimonopoly Act show that the company's efforts had not penetrated deeply enough. In particular, an in-house analysis shows that room remains for improvement in several ways. 1) At the individual employee level, old values and preconceptions have hindered a quick response to social changes. 2) Personnel in charge of sales have spent extended periods in the same division. 3) Although auditing of each division has produced results to some degree, monitoring of compliance aspects has been inadequate.

Based on this self-examination, the company is now taking the following steps to prevent the recurrence of such a situation ever again.

(1)Reinforcement of Compliance System

- Board of Directors Resolution and Executive Committee Agreement

  In July 2005 the company pledged, by resolution of the Board of Directors in agreement with the Executive Committee, to strictly observe the Antimonopoly Act, stringently refrain from any actions that might be seen as suspicious, and thus absolutely prevent recurrence of any incident of the kind that has occurred.
- Compliance Declaration

  In the wake of the resolution by the Board of Directors, a declaration of similar intent was executed by all general managers of the company's divisions, headquarters, branches and works, by which they swear their subordinates to strictly observe all compliance rules.
- Pledge of Antimonopoly Act Observance

  The company obtained written pledges to observe the Antimonopoly Act from all company employees in positions of section manager and higher who belong to divisions that sell to the public sector.
- Appointment of Compliance Officers

  Business managers or deputy managers of divisions and headquarters, together with branch managers and deputy general managers of company works, have all been appointed to promote activities toward achieving full compliance.
- Establishment of Departmental Compliance Committees

  To promote compliance more powerfully within the division headquarters and works, starting from fiscal 2006 departmental compliance committees are being established at all company headquarters and works. The respective compliance officers are to chair the committees and to deliberate, render decisions on, execute and follow-up on compliance promotion policies and plans within their department. They will also carry forward responses to individual projects, etc.
- Establishment of Compliance Liaison Conferences

  To ensure compliance throughout the entire MHI Group, including affiliates, starting in fiscal 2006 the company has established compliance liaison conferences for each division and its affiliates. The compliance officers are in charge of

their respective conferences, and committee members are drawn from representatives of the affiliate companies. The conferences serve as venues for exchanges of information, follow-up, etc. pertaining to compliance promotion.

(2)Enhancement of Business Operation Methods and Development of Monitoring System

- Drafting of Conduct Standards for Contacts with Competitors

  The company has drafted standards of conduct pertaining to contacts with competing firms by sales personnel. Among other issues, the guidelines define the permissible scope of such contact and, in cases when such contact is permitted, require reporting to the compliance officer both prior to and following said contact.
- Checking and Confirmation by Compliance Check Sheets

  Within all sections that sell to the public sector, for all business involving competitive bidding and order receipt, a compliance check sheet is used to check that no aspects run afoul of the Antimonopoly Act, etc. The marketing section head is required to sign the check sheet as evidence that confirmation has been made of full compliance with all revelant laws.
- Check by Compliance Officer

  The compliance officer confirms that the conduct standards have been observed and that the business operation has been duly checked against the check sheet.

(3)Reinforcement of Monitoring System

- Establishment of Internal Audit Department

  Traditionally, internal audits were handled by a section subsumed under the General Affairs Department, but in July 2005 the company established a new Internal Audit Department as a specialized entity reporting directly to the President. The new configuration has reinforced internal controls over the entire MHI Group, including affiliated companies.
- Establishment of Order Compliance Committee

  A new Order Compliance Committee was established composed of the Director in charge of the Administration Departments, relevant section managers, the administrative general managers of the various divisions and headquarters, and deputy business managers in charge of managerial matters. The committee, soliciting advice from external experts, monitors the confirmation work performed by the compliance officers and checks on progress in the implementation of compliance policies.

(4)Proper Personnel and Business Management and Thorough Reinforcement of Education

- Personnel Management

  Employees' observance of compliance regulations is reflected in their performance evaluations, appointments and job transfers. Any violations elicit strict disciplinary action.
- Business Management

  The company has devised a mechanism whereby employees who have long been involved in selling to the public sector are periodically transferred to a different job.
- Reinforcement of Education

  Compliance education that was formerly given only to employees being promoted to group head is now extended to those being promoted to section manager or supervisor as well. Also, compliance promotion training targeted at all employees is carried out twice each year. Employees in the Sales Division receive re-education using materials including a revised manual for abiding by the Antimonopoly Law.
- Clarification of Work Scope of Former Civil Servants, etc. Hired as Advisors and Part-time Staff

  Former civil servants, etc. hired as advisors or part-time staff are appointed in a quest to receive their technical advice based on their individual depth of knowledge and high level of specialization. In order to secure transparency, the company is re-clarifying the intent for which such individuals are hired and the scope of the work they perform (which excludes involvement in sales).

(5) Ensuring Proper Fairness in Bidding by All Affiliates

The company has surveyed all its affiliates regarding their involvement in business catering to the public sector, and those that regularly participate in bidding on public-sector projects now implement the same compliance measures as MHI. At other affiliates also, measures are being implemented to ensure proper bidding, in order to achieve proper order compliance throughout the MHI Group.

Enhancing Compliance Awareness

Progress in Compliance Promotion Training

MHI believes that to ensure thorough compliance in all areas, it is particularly important for each and every employee to be aware of this issue, and in keeping with this belief the company undertakes an array of initiatives to enhance compliance awareness. Starting in 2003, compliance promotion training programs were carried out once each year, with those in higher positions engaging their subordinates in discussions about compliance. Since 2005, the frequency has been raised to twice annually. In fiscal 2005, some 27,600 employees took part in this training, for a participation rate of approximately 84%. These figures correspond to a significant increase over fiscal 2004, when participants numbered 25,300 and the participation rate was 76%.

The training contents have been well understood and taken to heart in all divisions, and many employees have expressed the view that the program proved effective in advancing compliance within their area. Furthermore, a change was seen in the performance of business duties, with employees more willing to question past practices and determined to see their actions from the vantage points of public conventions and society at large. Such changes are hailed as evidence that compliance considerations are steadily penetrating throughout the company, and MHI will continue to take steps to boost participation rates in this training program even higher in the years ahead.

Survey on Compliance Awareness

In order to identify how the foregoing initiatives have changed and spread the awareness of compliance among the company's employees, and to apply those results to the further enhancement of those initiatives, in January 2006 the Compliance Committee conducted a survey designed to measure the level of penetration of compliance awareness. A similar survey had been carried out in September 2004.

In the new survey, close to 90% of the employees responded that they had become more aware of compliance than before. This marks a major improvement from the previous survey. At the same time, however, the percentage of employees who said they are unfamiliar with the contents of the MHI Compliance Guidelines or who did not know about the existence of a special contact point for submitting letters on compliance, though down from the previous survey, remained insufficient. As a result, initiatives are now being taken to raise the level of understanding among all employees.

Going forward, the company intends to conduct this survey annually as a way of confirming whether the measures being implemented to promote thorough compliance are functioning effectively.

Results of Survey on Compliance Awareness

Overview

Administered: January 2006

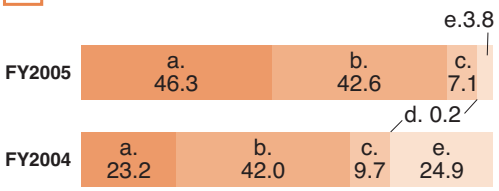
Survey target: 9,830 employees (about 30% of total)

Number of respondents: 6,682

Response rate: 68.0%

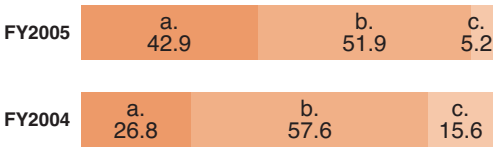
Results

Q How has your awareness of compliance changed?



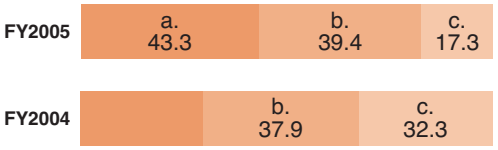
a. I have become much more aware.
b. I have become slightly more aware.
c. My awareness has not changed much.
d. I now attach little importance to it.
e. Not sure.

Q Are you familiar with MHI's Compliance Guidelines?



a. I have a good understanding of them.
b. I know of their existence, but have no understanding of their contents.
c. I know nothing about them.

Q Do you know about the dedicated contact point to receive letters on compliance?



a. I know about it and how to access it.
b. I know of its existence, but not how toaccess it.
c. I know nothing about it.

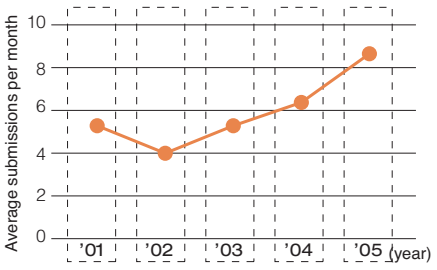
Dedicated Contact Point

In June 2001 MHI established a dedicated contact point within the Compliance Committee to enable the company to achieve early detection and correction of any unlawful or inappropriate activity. This "open window" receives written submissions from employees, affiliated companies and suppliers.

In fiscal 2005 the number of such submissions increased to a monthly average of between eight and nine. The most frequently cited problems, accounting for about 35% of submissions, involved workplace rule infractions or the work environment. The next most common type, accounting for 20%, involved suspicion of unethical or unlawful behavior. The Compliance Committee quickly investigates each report, and if wrongdoing is confirmed, it seeks to correct the problem and applies those lessons uniformly throughout the company. MHI management believes that this system is working effectively to make company operations more compliance-oriented.

The company gives its full consideration to protecting those who submit letters to the committee, to ensure that they are not treated unfavorably for having provided such information. Initiatives in this regard include subsequent checks on how the informants are being treated in terms of job assignments.

Submissions to the Dedicated Contact Point



Procurement Compliance Activities

MHI's procurement activities are based on the ideal of fairness, which stands on the four pillars of openness, equity and justice, mutual trust, and compliance. In procurement affairs, the company promotes compliance and undertakes a variety of activities to put this basic ideal of fairness into practice.

On a company-wide basis, group education programs are conducted annually aimed at raising understanding of and respect for the main laws relevant to procurement activities, including the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors, Construction Business Act, Stamp Tax Law, Civil Code and Commercial Code. A test is administered at the end of the program, and explanations of any poorly understood test questions are later distributed to prompt the participants to review their answers, as a way of raising their level of comprehension. To date, about 150 employees involved in procurement, mainly younger members, have completed this education program.

Since fiscal 2005 MHI has also implemented a program of e-learning, making use of materials compiled in-house, aimed at familiarizing all employees who might have business contact with suppliers - not only those involved in procurement - with the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors. To date, approximately 700 employees have participated, and going forward the company will continue to administer the program until it is completed by all targeted employees. From 2006, the target group has been extended to include employees of MHI subsidiaries, in an effort to raise the knowledge level concerning this important law throughout all Group companies.

In collaboration with the Personnel Department, the company has also drafted a Q&A brochure about legislation concerning the rights of dispatched temporary workers. The brochure has been distributed throughout the company with the aim of promoting fair and lawful contracts with temp staff agencies as well as consideration of workplace conditions for staffers assigned to work at MHI.

e-learning

In addition, every year the company holds a conference on compliance in procurement activities as a forum to renew awareness of the social ramifications of those activities and to discuss measures that will contribute to more thorough compliance implementation. Compliance in procurement is also checked by internal auditing as a way of seeking continuous improvements, enabling the attainment of greater efficacy and motivation in related compliance matters.

Management of Personal Information

In tandem with the enactment of Japan's Protection of Personal Information Law, MHI formulated its own Personal Information Protection Policy for release both inside and outside the company. In addition, the company drew up a set of Personal Information Protection Rules and a "Personal Information Management Manual," and to maximize awareness of this issue, the most noteworthy points relating to in-house affairs were compiled into a digest format and distributed to all employees. Education programs are also administered according to employee level — for example, to new employees, newly appointed supervisors, etc. — and compliance promotion training is given to all employees to heighten awareness of personal information. A personal information database registration system has also been developed as a means of achieving unified handling of registered data.

Going forward, the company will continue to improve the system of education by employee level and compliance promotion training in order to further elevate employee awareness. At the same time, using tools such as a checklist on personal information protection, periodic studies into in-house data management will be undertaken in a quest for continuous improvement in the company's handling of personal information.

Personal Information Protection Policy

Mitsubishi Heavy Industries, Ltd. (hereinafter "MHI") recognizes that all personal information managed and used in its business activities must be handled and protected with the utmost care. Therefore, MHI will follow the basic policy stated below.

1. MHI will not acquire any personal information through falsehood or other improper means.
2. MHI will use personal information only to the extent and for the purposes specified, which will be made publicly known or notified to the persons to whom the information pertains.
3. MHI will endeavor to keep such personal information accurate and up-to-date.
4. MHI will take necessary and appropriate measures to maintain the security of such personal information.
5. MHI will furnish its employees and contractors handling such personal information with the necessary and appropriate guidance and supervision.
6. MHI will not provide personal information to any third party without the consent of the person involved.
7. If MHI receives an inquiry from a person about the use or content of personal information related to that person, it will provide a reasonable response.
8. If MHI receives any complaints regarding the handling of personal information, it will resolve such complaints in a prompt and appropriate manner.
9. MHI will establish rules and management systems for proper handling and protection of personal information and will thoroughly adhere to them.
10. MHI will engage in a strong effort to further enhance personal information protection systems by regularly reviewing and updating all rules and procedures regarding the handling of personal information, including this policy.
11. MHI will comply with all applicable Japanese laws and regulations regarding the handling of personal information.

April 1, 2005
Mitsubishi Heavy Industries, Ltd.
Kazuo Tsukuda, President

For the full text regarding MHI's policy on personal information protection, refer to the following:
URL http://www.mhi.co.jp/kojinjouhou_e.html

Guideline for Prevention of Bribery Involving Foreign Civil Servants

In accordance with the Unfair Competition Prevention Law and laws and regulations relating to the prevention of corruption of civil servants in applicable countries, MHI has long operated under a basic policy of never attempting to bribe a civil servant of a foreign country in order to obtain an improper business advantage. The MHI Compliance Guidelines also prohibit improper business dealings that run counter to the spirit of compliance. In conjunction with these aims, in April 2005 the company established a Guideline for the Prevention of Bribery Involving Foreign Civil Servants. This Guideline explains terms and basic concepts in the Unfair Competition Prevention Law, and also indicates specific conduct guidelines for entertaining or giving gifts to foreign civil servants, so that employees will be able to act properly and unwaveringly when they are doing business overseas. Furthermore, since the Unfair Competition Prevention Law also applies to the overseas staff of Japanese companies, an English version of the Guideline has been prepared and is used to raise awareness abroad that bribes must never be offered to civil servants.

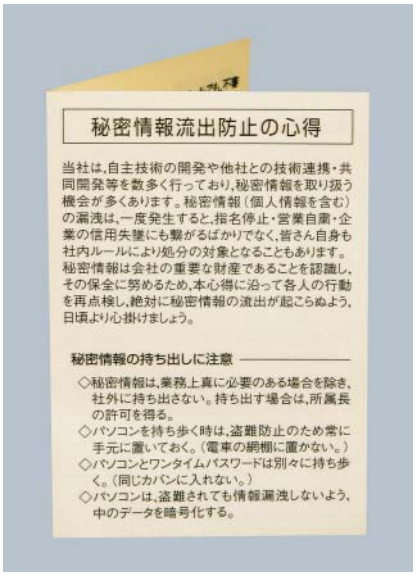
Measures against Leakage of Confidential Information

In June 2005 a virus invaded the computer of an employee at an MHI affiliate, an electrical machinery manufacturer, resulting in a leak of data on nuclear power plant inspections. MHI, being the leading contractor in this incident, was punished by a number of power providers with a three-month suspension of new business dealings. Then in August it was discovered that a company that collaborates with MHI had leaked information on inspections of power-generating turbines, including water turbines, also through a computer virus. In this case too, a number of power suppliers responded by suspending MHI from new business for a period of roughly two months.

Through the years, MHI has taken various steps to raise employees' awareness toward management of confidential information. These include the establishment of in-house rules on managing confidential data, documents, etc.; setting down standards on information security management and other information systems; and the preparation and distribution of a manual on management of confidential information.

In light of the recent information leaks, however, the company concluded that there is a need to promote greater awareness of existing rules, induce more proper management of information in accordance with those rules, and elevate the level of awareness toward such management in all employees. Toward those ends, in September 2005 the company prepared a written guide on how to prevent leaks of confidential information, and distributed it to all employees. In addition, a company-wide survey was carried out with the aim of implementing various measures – for example, spurring employee awareness, rethinking in-house information management systems, etc. – based on an understanding of the present state of the company's confidential data and security management.

The results of the survey revealed that security measures were deemed inadequate especially in two areas. One is management of information released outside the company: for example, (a) in-house procedures to be followed when releasing confidential information kept in company computers or stored in external memory devices, or when sending confidential information by e-mail to third parties outside the company; and (b) exchanges of security regulations with contracted parties in cases when business that includes confidential information is being outsourced. The second area with inadequate security measures was said to be management of outside personnel: for example, exchanging confidentiality agreements with companies that provide temporary staff, etc. to work at MHI. One respondent observed that in some instances even basic matters relating to security were not fully observed owing to inadequate education and educational materials.


秘密情報流出防止の心得

当社は,自主技術の開発や他社との技術連携・共同開発等を数多く行っており,秘密情報を取り扱う機会が多くあります。秘密情報(個人情報を含む)の漏洩は,一度発生すると,指名停止・営業自粛・企業の信用失墜にも繋がるばかりでなく,皆さん自身も社内ルールにより処分の対象となることもあります。秘密情報は会社の重要な財産であることを認識し,その保全に努めるため,本心得に沿って各人の行動を再点検し,絶対に秘密情報の流出が起こらぬよう,日頃より心掛けましょう。

秘密情報の持ち出しに注意

◇秘密情報は,業務上真に必要のある場合を除き,社外に持ち出さない。持ち出す場合は,所属長の許可を得る。
◇パソコンを持ち歩く時は,盗難防止のため常に手元に置いておく。(電車の網棚に置かない。)
◇パソコンとワンタイムパスワードは別々に持ち歩く。(同じカバンに入れない。)
◇パソコンは,盗難されても情報漏洩しないよう,中のデータを暗号化する。

MHI guide on how to prevent leaks of confidential information

Going forward, MHI intends to counter these problems in a number of ways. These include: ① stronger measures to deal with the conveyance of confidential information outside the company, such as encoding of external memory devices and e-mail; ② stronger security management at outsourcers through promotion of exchanges of memoranda on prevention of information leakage; ③ repeated efforts to achieve widespread recognition of specific procedures and rules relating to confidential information management and information security; and ④ improvement of educational materials and implementation of education tailored to employees of every rank.

Recent Investigations

In March 2006 the Japanese Fair Trade Commission (FTC) conducted an on-site inspection of MHI on suspicion that the company had violated the Antimonopoly Act in securing orders for sluice gates and tunnel ventilation equipment. In April, the company was subjected to another FTC search on suspicion of violating the Antimonopoly Act with regard to an order for a sludge treatment facility; in June, the company and an employee were indicted in this case.

The company is cooperating fully with these investigations. In the wake of the alleged violation of the Antimonopoly Act last year in relation to steel bridge construction orders, a variety of measures have been implemented throughout the company to achieve total compliance at all times. The company is determined to continue putting these measures into full practice in order to prevent another such occurrence ever again.

Environmental Report

MHI makes an important contribution to global society through myriad environmental protection measures. The company assesses the environmental impact exerted through its business activities, and takes decisive steps to ease environmental burdens.

Environmental Report

Environmental Impact of MHI's Business Operations

MHI makes unwavering efforts to alleviate burdens on the environment throughout the product lifecycle – from development and design to procurement of raw materials, production, distribution, on-site installation, usage, servicing and final disposal.

INPUT

Energy resources

Total energy input	11,375,378,381 MJ
Purchased electricity	763,947 MWh
Heavy fuel oil A	28,339 kL
Heavy fuel oil C	14,614 kL
Kerosene	6,296 kL
Gas oil	5,380 kL
City gas	23,577 km³
LPG	2,765 t
Other (steam, acetylene, butane, etc.)	603,903,691 MJ

Water

Usage volume 13.13Million t

Raw materials

Iron, plastics, paper, etc.

Other

Chemical substances (PRTR)*1 3,833 t

Business Activities

Planning and Marketing → Development and Design → Procurement → Manufacture → Distribution → On-site Installation → Usage → Servicing → Disposal

Manufacture ↔ Trial Running ↔ Repair

OUTPUT

Water

Wastewater 11.05 Million t

Water pollutants*2

COD	39 t
Nitrogen	39 t
Phosphorus	3 t

Waste materials

Generated volume	14.7 Million t
Recycled volume	0.118 Million t
Final disposal volume	0.013 Million t

Air pollutants*3

CO_2	0.54 Million t
NOx	137 t
SOx	317 t
Dust	5 t

Other

Chemical substances (PRTR)*1 2,237 t

Vibration, noise, odor, etc.

Collection and Recycling of Used Products

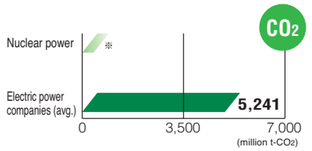
MHI products subject to Home Appliance Recycling Law: air conditioners
Number of units recycled: 156,000
Weight of recycled unit: 6,594 tons
Weight of materials recycled into products: 5,631 tons

Examples of Environmental Advantages of Use of MHI Products

Nuclear Power Generation

Because nuclear power is generated by nuclear fission and involves no combustion, no CO_2 is emitted during the generation process. It therefore contributes significantly to curbing total CO_2 emissions. ※

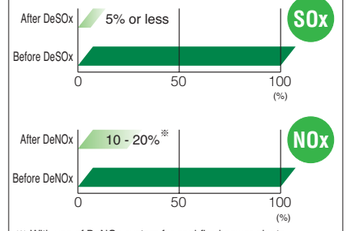
- The comparison below is between the volume of CO_2 emitted with nuclear power generation (estimate based on total output of 138.29 million MWh generated in 2005 by nuclear power plants built by MHI) and the average CO_2 emission volume resulting from power generation at Japanese electric power companies.*4



Flue Gas Desulfurization (DeSOx) and Denitration (DeNOx) Systems

These systems, by curbing emissions of SOx and NOx, serve as an important countermeasure against acid rain.

- The comparisons below refer to flue gas emitted in the process of thermal power generation.

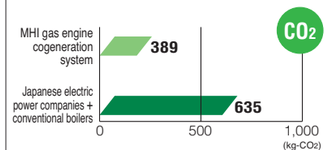


※ With use of DeNOx system for coal-fired power plants

Gas Engine Cogeneration Systems for Power Generation

These systems, featuring the world's highest level of total conversion efficiency, make important contributions to energy conservation and curbing of CO_2 emissions.

- The figure below compares CO_2 emission levels when MHI's MACH-30G gas engine cogeneration system – which generates both electricity and heat – is adopted (estimated for power generation of 1MWh) and when the equivalent amounts of electricity are generated by Japanese electric power companies and conventional fuel-oil-fired boilers, respectively.



*1 See page 43.

***2 Water pollutants** Outputs shown only for water pollutants subject to regulations applied to total volume.

***3 Air pollutants** Outputs of NOx, SOx and dust are subject to laws and regulations.

***4 Average CO_2 emission volume**
The amount adopted here is 0.379 kg-CO_2/kWh, the figure reported by the Federation of Electric Power Companies of Japan for fiscal 2001.

Environmental Report

Environmental Management System

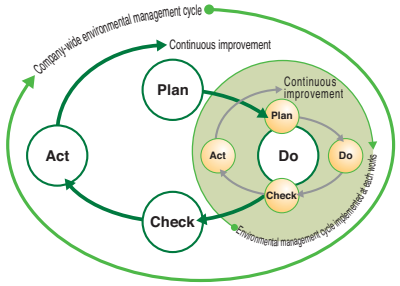
MHI is presently promoting the creation of an environmental management structure at all subsidiaries, and assessing the progress achieved to date, in a quest to forge an environmental management system on a Group-wide basis. To protect the earth's environment, the company complies with all environmental laws and regulations and is working to develop a structure enabling accurate understanding – and prevention – of potential risk from accidents that would cause contamination, etc.

Environmental Management Structure

Environmental Management Structure

Two entities have been established in-house to undertake activities to resolve environmental issues. The Environment Liaison Conference functions to implement, on a company-wide basis, decisions rendered by the Environment Committee. The Energy Conservation Liaison Conference specializes in measures to save energy and reduce CO_2 emissions. In addition, environmental committees have been set up within all headquarters, divisions and works to carry out company environmental policies and to undertake environmental management activities matching the special features of each local area.

PDCA cycle



ISO Accreditation

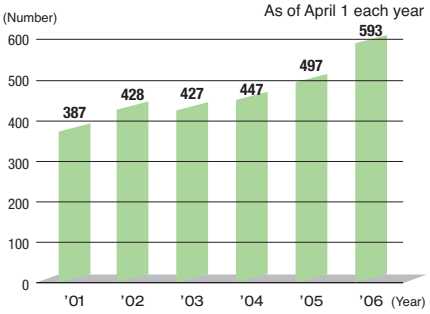
In April 2006 MHI's Head Office won ISO14001* accreditation (shown on page 38), joining all 15 domestic works in achieving this distinction. Since acquiring certification, the works continuously strive to improve their environmental management systems and smoothly implement the company's "plan-do-check-act" (PDCA) cycle. They also take steps to continually renew their ISO accreditation.

Environmental Education

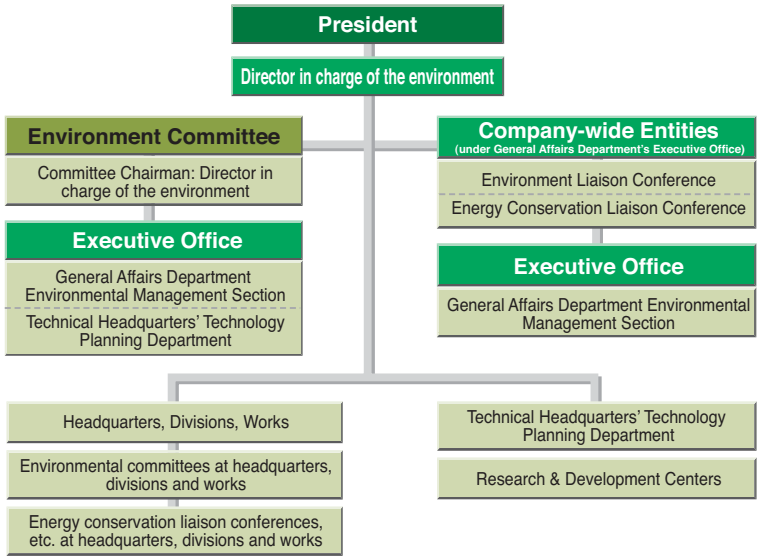
To raise awareness of environmental issues, MHI regularly provides all employees with environmental education geared to their specific position, from new employees to higher management. Each works carries out internal environmental audits according to ISO14001 guidelines to verify the effectiveness of its environmental management system and monitor environmental performance.

The company also conducts special education for employees engaged in painting work or handling of dangerous materials. The program aims to instruct them in the potential environmental impact of their tasks, proper methods for everyday management, monitoring and measurement, and how to deal with problems in an emergency.

Number of ISO14001-registered internal auditors



Environmental Management Structure



MHI holders of certified public qualifications relating to the environment

As of April 1, 2006

Area of qualification	Category	Number
Environmental measurement	(Density, noise and vibration)	8
Energy management	Thermal and electrical management	116
Pollution prevention management	Air and water quality (Class 1 to 4), noise and vibration	400
Pollution prevention management supervision		20
Supervision in handling of specified chemical substances, etc.		1,013
Supervision in handling of organic solvents		1,761
Waste disposal facilities engineering management	(Waste disposal engineering manager)	34
Management of specially managed industrial wastes		140

*** ISO14001** An international standard for environmental management systems issued by the International Organization for Standardization (ISO). The Yokohama Dockyard & Machinery Works acquired the accreditation in 1997, making MHI Japan's first ISO14001-certified general heavy industrial manufacturer.

Groupwide Environmental Management Systems

To promote the introduction of environmental management systems at its subsidiaries, MHI created two environmental standards of its own and has been carrying out activities to assist affiliates toward compliance with both guidelines. “M-EMS” is based on ISO14001 while “M-EMS EcoAction” is modeled on Eco-Action 21, a set of guidelines laid down by the Japanese Ministry of the Environment.

To implement these standards, MHI created an Executive Office, comprised of members from its environmentally related divisions, and registered 14 environmental chief auditors and nine environmental auditors (possessing qualifications earned externally). In accordance with the standards’ requirements, at each MHI affiliate environmental issues have been clarified, environmental policies formulated, and documentation developed. Thanks to vigorous initiatives in providing environmental education to all their employees, to date 92 of MHI’s affiliates have now successfully set in place an in-house environmental management system.

Going forward, the MHI Group will make concerted efforts to implement the environmental management standards by precisely identifying environmental management issues, mulling solutions, and carrying out environmental management activities in line with the PDCA cycle.

CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

Mitsubishi Heavy Industries, Ltd.
Head Office
Minato-ku, Tokyo
Japan

has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standards:

ISO 14001:2004, JIS Q 14001:2004

The Environmental Management System is applicable to:

Administration and sales of ships, marine structures, aircraft, space systems, turbines, boilers, nuclear equipment and other power systems, environmental systems, transportation systems, intelligent transport systems, chemical plants, turbo machinery, rubber and tire machinery, packaging machinery, testing equipment, motor and inverter for electric vehicles, laser and electronics, pulp and paper making machinery, printing machinery, machine tools, air-conditioning machinery, refrigeration systems, machinery for cargo-hoisting and transportation, offshore facilities and other steel structures.

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

Approval Certificate No: YKA 4003622

Original Approval: 6 April 2006
Current Certificate: 2 October 2006
Certificate Expiry: 5 April 2009

Issued by: Lloyd's Register Quality Assurance Limited

MHI Head Office ISO14001 Certificate of Approval

Environmental Management Systems Adopted at MHI and its Subsidiaries

ISO14001 accreditation at MHI works and subsidiaries

	Base or Company name	Date of issue (or registration)
MHI site	Yokohama Dockyard & Machinery Works	Oct. 31, 1997
	Nagasaki Shipyard & Machinery Works	May 22, 1998
	Takasago Machinery Works	June 26, 1998
	Air-Conditioning & Refrigeration Systems Headquarters	Nov. 20, 1998
	General Machinery & Special Vehicle Headquarters	May 21, 1999
	Paper & Printing Machinery Division	Sept. 3, 1999
	Plant and Transportation Systems Engineering & Construction Center (Mihara)	Sept. 3, 1999
	Hiroshima Machinery Works	Sept. 30, 1999
	Shimonoseki Shipyard & Machinery Works	Nov. 24, 1999
	Nagoya Guidance & Propulsion Systems Works	Dec. 18, 1999
	Kobe Shipyard & Machinery Works	Feb. 18, 2000
	(Former) Industrial Machinery Division	Apr. 1, 2000
	Machine Tool Division	Dec. 28, 2000
	Plant and Transportation Systems Engineering & Construction Center (Yokohama)	June 29, 2001
	Nagoya Aerospace Systems Works	Oct. 1, 2003
	Head Office	Apr. 6, 2006
Domestic affiliates	MHI Solution Technologies Co., Ltd.	Aug. 28, 1998
	Mitsubishi Agricultural Machinery Co., Ltd.	July 24, 2001
	Nagoya Ryoju Estate Co., Ltd.	Mar. 14, 2002
	Nishinihon Ryoju Estate Co., Ltd.	July 12, 2002
	Mitsubishi Environment Engineering Co., Ltd., Yokohama Branch	Apr. 12, 2004
	RIC Co., Ltd.	Apr. 23, 2004
	Ryoin Co., Ltd., Biwajima Branch	July 22, 2004
	Ryoin Co., Ltd, Mihara Branch	Aug. 3, 2004
	Mihara Ryoju Machinery Works Co., Ltd.	Feb. 16, 2005
	Ryowa Engineering Co., Ltd.	Feb. 17, 2005
	Shimonoseki Ryoju Estate Co., Ltd.	Mar. 14, 2005
	Kantou Ryoju Estate Co., Ltd.	Mar. 17, 2005
	MHI Food & Packaging Machinery Co., Ltd.	Mar. 17, 2005
	Kusakabe Co., Ltd.	Mar. 24, 2005
	Tamachi Bldg. Co., Ltd.	Mar. 25, 2005
	Higashi Chugoku Ryoju Estate Co., Ltd.	Mar. 29, 2005
	Hiroshima Ryoju Estate Co., Ltd.	Apr. 9, 2005
	Mitsubishi Environmental Engineering Co., Ltd., Head Office	Apr. 9, 2005
	Ryojyu Coldchain Co., Ltd.	Apr. 22, 2005
	Dia Precision Casting Co., Ltd.	May 11, 2005
	Tokiwa Machinery Works Ltd.	May 18, 2005
Overseas affiliates	MHI-Haier (Qingdao) Air-Conditioners Co., Ltd.	Dec. 14, 1998
	MHI Equipment Europe B.V.	Nov. 9, 2001
	Mitsubishi Caterpillar Forklift Europe B.V.	July 25, 2002
	Mitsubishi Heavy Industries Climate Control Inc.	June 12, 2003
	Mitsubishi Power Systems, Inc., Orlando Service Center	Feb. 8, 2004
	MHI Automotive Climate Control (Shanghai) Co.,Ltd.	July. 11, 2005
	CBC Industrias Pesadas S.A.	Dec. 1, 2005
	Mitsubishi Heavy Industries Korea Ltd.	Dec. 17, 2005
	Mitsubishi Heavy Industries Mahajak Air Conditioners Co.,Ltd.	Dec. 21, 2005
	Mitsubishi Heavy Industries-Jinling Air-Conditioners co., Ltd.	Jan. 24, 2006
	MHI Machine Tool (Hong Kong) Ltd.	Mar. 30, 2006
	Mitsubishi Heavy Industries (Hong Kong), Ltd.	Apr. 5, 2006
	MLP Hong Kong, Ltd.	May 25, 2006
	Mitsubishi Heavy Industries, (Shanghai) co., Ltd.	July 5, 2006

EcoAction 21 accreditation at MHI affiliates

	Company name	Date of issue (or registration)
Domestic affiliates	Daiya Building Service Co., Ltd.	Apr. 21, 2005
	Nuclear Development Corporation	May 30, 2005
	Ryonichi Engineering Co., Ltd.	Oct. 31, 2005

K-EMS* accreditation at MHI affiliates

	Company name	Date of issue (or registration)
Domestic affiliates	Seiryo Engineering Co., Ltd.	Dec. 24, 2004
	Kinki Ryoju Estate Co., Ltd.	Feb. 23, 2005
	Shinryo Hi Technologies, Ltd.	Feb. 23, 2005
	MHI Environment Engineering Co., Ltd., Kobe Branch	Mar. 24, 2005
	Engineering Development Co., Ltd.	Mar. 24, 2005
	Nuclear Power Training Center, Ltd.	Mar. 24, 2005
	Kobe Ryohkoh Service Co., Ltd.	Mar. 24, 2005
	Ryoin Co., Ltd., Kobe Branch	Mar. 24, 2005
	Techno Data Engineering Co., Ltd.	Feb. 27, 2006
	Energis Ltd.	Mar. 23, 2006

MHI affiliates adopting M-EMS (based on ISO14001)

	Company name	Date of issue (or registration)
Domestic affiliates	Kensa Kenkyusho Inspection Co., Ltd.	Apr. 25, 2005
	Ryoin Co., Ltd., Tokyo Solution Center	Apr. 26, 2005
	MHI Printing & Paper Converting Machinery Sales Co., Ltd.	May 12, 2005
	MHI Air-Conditioning & Refrigeration Systems Corporation	May 13, 2005
	MHI Erection Co., Ltd. (now MHI Bridge & Steel Structures Engineering Co., Ltd.)	May 16, 2005
	MHI Forklift Sales Co., Ltd.	July 12, 2005
	MHI Engines Systems Co., Ltd.	July 12, 2005

MHI affiliates adopting M-EMS EcoAction (based on EcoAction 21)

	Company name	Date of issue (or registration)
Domestic affiliates	Mihara Ryoju Engineering Co., Ltd.	Apr. 20, 2005
	Ryoin Co., Ltd., Sagamihara Branch	Apr. 25, 2005
	Ryoin Co., Ltd., Head Office	Apr. 26, 2005
	Shunjusha Ltd.	Apr. 26, 2005
	MHI Sagami High-tech, Ltd.	May 9, 2005
	Ryosen Engineers Co., Ltd.	May 10, 2005
	MHI Turbo-Techno Co.	May 11, 2005
	Hiroshima Dia System Co., Ltd.	May 11, 2005
	Ryoju Transportation Equipment Engineering & Service Co., Ltd.	May 12, 2005
	MHI Marine Engineering, Ltd.	May 16, 2005
	Churyo Engineering Co., Ltd.	May 16, 2005
	Ryoin Co., Ltd., Minatomirai Branch	May 16, 2005
	MHI Aerospace Systems Corporation	July 12, 2005
	MDS Corporation	July 22, 2005

Affiliates incorporated into ISO14000 certification of MHI works or Head Office

	Company name	Date of issue (or registration)	MHI division/works
Domestic affiliates	MHI Plastic Technology Co., Ltd.	Apr. 1, 2000	IMD
	Socio Diamond Systems Co., Ltd.	Oct. 8, 2004	PPMD
	Ryoin Co., Ltd., Nagoya Branch	Oct. 22, 2004	NASW
	MHI Aerospace Production Technologies, Ltd.	Oct. 22, 2004	NASW
	Diamond Air Service Incorporated	Oct. 22, 2004	NASW
	Ryoin Co., Ltd., Shimonoseki Branch	Nov. 22, 2004	SSMW
	Kanmon Dock Service Co., Ltd.	Nov. 22, 2004	SSMW
	Shimonoseki Ryo-Jyu Engineering Co., Ltd.	Nov. 22, 2004	SSMW
	Ryoin Co., Ltd., Iwatsuka Branch	Jan. 6, 2005	IMD
	MHI Industrial Machinery Co., Ltd.	Jan. 6, 2005	IMD
	MHI Machine Tool Engineering Co., Ltd.	Feb. 25, 2005	MTD
	Ryoin Co., Ltd., Kyoto Branch	Feb.25, 2005	MTD
	MHI Aero Engine Service Co., Ltd.	Apr. 11, 2005	NGPSW
	MHI Logitec Company Limited	Apr. 11, 2005	NGPSW
	MHI Diesel Service Co., Ltd.	May 12, 2005	KSMW
	Nuclear Plant Service Engineering Co., Ltd.	May 12, 2005	KSMW
	Sinryo Thermal Power Plant Service Engineering Co., Ltd.	May 12, 2005	KSMW
	Sanshin-Tec. Ltd.	May 12, 2005	KSMW
	MHI Tunneling & Foundation Machinery Engineering Co., Ltd.	May 12, 2005	KSMW
	MHI Parking Co., Ltd.	May 14, 2005	YDMW
	Ryoin Co., Ltd., Yokohama Branch	May 14, 2005	YDMW
	Kantou Ryoju Estate Co., Ltd., Yokohama Branch	May 14, 2005	YDMW
	MHI Yokohama Power Co., Ltd.	May 14, 2005	YDMW
	Koryo Inspection & Service Co., Ltd.	May 14, 2005	TMW
	MHI Gas Turbine Service Co., Ltd.	May 14, 2005	TMW
	Koryo Engineering Co., Ltd.	May 14, 2005	TMW
	Ryoin Co., Ltd., Takasago Branch	May 14, 2005	TMW
	Nuclear Plant Service Engineering Co., Ltd., Takasago Division	May 14, 2005	TMW
	MEC Engineering Service Co., Ltd.	June 23, 2005	HMW
	Hiroshima Ryoju Engineering Co., Ltd.	June 23, 2005	HMW
	MHI Plant Construction Co., Ltd.	June 23, 2005	HMW
	Mitsubishi-Hitachi Metals Machinery, Inc.	June 23, 2005	HMW
	Ryoin Co., Ltd., Hiroshima Branch	June 23, 2005	HMW
	Sagami Logistics & Service Co., Ltd.	Sept. 13, 2005	GMSVH
	Choryo Senpaku Kouji Co., Ltd.	Sept. 22, 2005	NSMW
	Ryoin Co., Ltd., Nagasaki Branch	Sept. 22, 2005	NSMW
	Choryo Inspection Co., Ltd.	Sept. 22, 2005	NSMW
	MHI Oceanics Co., Ltd.	Sept. 22, 2005	NSMW
	Kowa Industry Co., Ltd.	Sept. 22, 2005	NSMW
	Choryo Control Systems Co., Ltd.	Sept. 22, 2005	NSMW
	Choryo Designing Co., Ltd.	Sept. 22, 2005	NSMW
	MHI Maritech, Ltd.	Sept. 22, 2005	NSMW
	Choryo Software Co., Ltd.	Sept. 22, 2005	NSMW
	Chiyoda Lease Co., Ltd.	Sept. 22, 2005	NSMW
	Ryosan Co., Ltd.	Sept. 22, 2005	NSMW
	Choryo Enjineering Co.,Ltd.	Aug. 21, 2006	NSMW
	Nagasaki Research & Development Center	Aug. 21, 2006	NSMW
	MHI Machine Tool Sales Co., Ltd.	Jan. 13, 2006	MTD
	Kantou Ryoju Estate Co., Ltd., Department of Facilities Management Service	Apr. 6, 2006	HO
	Tamachi Bldg. Co., Ltd., Shinagawa Building Management Center	Apr. 6, 2006	HO
	MHI Personnel Staff, Ltd.	Apr. 6, 2006	HO
	MHI Tourist, Ltd.	Apr. 6, 2006	HO
	MHI Accounting Service, Ltd.	Apr. 6, 2006	HO
	MHI Finance Co., Ltd.	Apr. 6, 2006	HO
	Dia Food Service Co., Ltd.	Apr. 6, 2006	HO
	Daiya PR Co., Ltd.	Apr. 6, 2006	HO
	Computer Software Development Co., Ltd.	Apr. 6, 2006	HO
	Advanced Reactor Technology Co., Ltd.	Apr. 6, 2006	HO
	Diamond Air Service Inc.	Apr. 6, 2006	HO
	MHI Engine Systems Co., Ltd., Shinagawa Office	Apr. 6, 2006	HO
	E-Techno, Ltd.	May 13, 2006	KSMW

* **K-EMS** An environmental management system promoted by Kobe City, Japan.

Environmental Risk Management

Stance on Environmental Risk Management

To protect the global environment, MHI recognizes that besides observing laws and regulations pertaining to the environment it is vital for the company to accurately identify potential risk inherent in its business activities – for example, accidents that would result in environmental contamination – and establish procedures to prevent such occurrences. In addition, it is crucial that the company be ready to respond swiftly and properly to any emergency situation that might arise.

Toward those multiple ends, each of MHI's works has its own crisis management system to identify latent risks. Management is carried out in line with individually prepared manuals covering matters that include risk identification methods, everyday management procedures and contingency plans. Furthermore, each works regularly carries out emergency response drills for various hypothetical emergencies: for example, oil spills. A system is also in place whereby in the event of any emergency situation, the company's in-house crisis management information system is utilized to convey information swiftly through the hierarchy, all the way to the President.

Recent Environmental Accidents and Violations

In October 2005, an accident occurred at the Biwajima Plant of the Air-Conditioning & Refrigeration Systems Headquarters in which, during per-formance measurement in conjunction with compressor development, secondary refrigerant (HCFC) was released into the atmosphere. In December 2005, in a mishap at the General Machinery & Special Vehicle Headquarters, cooling water containing oily water from the cooling tower flowed into the rainwater system; a voluntary inspection of rainwater drainage detected normal-hexane extract substances exceeding the permissible limit. In February 2006, an accident took place at the Honmoku Plant of the Yokohama Dockyard & Machinery Works during ventilator replacement work on a docked ship under repair; when the piping was removed, residual oil inside spilled into the surrounding seawater.

MHI reported each of these accidents to the local government authorities, and initiatives were taken in-house to prevent any reoccurrence by instructing all works having similar facilities or performing similar tasks to conduct urgent emergency inspections and rectify any areas that need improvement. In these ways, vigorous efforts are being made company-wide to prevent any potential accident that would pollute the environment.

Countermeasures Against Soil and Groundwater Contamination

MHI is also taking important steps to detect and eliminate any contamination present in the soil or groundwater at the company's works. Furthermore, the company is working to terminate use of all volatile organic compounds (VOC) that could potentially pollute the environment.

Following contamination by a VOC of soil and groundwater at the Biwajima Plant of the Air-Conditioning & Refrigeration Systems Headquarters in March 2004, the company undertook soil testing at all works to check for VOCs. The testing revealed soil and groundwater contamination by VOC at seven sites. Remediation measures are being implemented under the guidance of local government authorities, and monitoring is under way on a regular basis.

Soil testing is also being carried out regularly at former factory sites that are no longer used for business purposes and on company properties allocated for use by the local community. In April 2006, such testing revealed soil contamination from heavy metals (lead, arsenic, mercury and selenium) at the former site of the Taiko Plant (Higashi-ku, Nagoya), and in May 2006 contamination from arsenic came to light at the former location of the Moriyama Tennis Courts (Moriyama-ku, Nagoya). The test results were reported to the local government authorities, the news was made public, and meetings were conducted to explain the situation to the surrounding communities. In both cases, although no groundwater contamination was found and there was no adverse impact on the ambient environment, the company has determined to excavate and remove the contaminated soil.

Going forward, MHI will continue to strive to prevent soil and groundwater contamination as an integral aspect of its corporate social responsibilities. And in the event that any contamination is detected, information will be reported to the local authorities and remediation measures will be devised and implemented.

Sites with VOCs*1 exceeding legal limits, and remediation progress

Site	Location	Soil and groundwater contamination	Soil contamination	Remediation progress	Remediation method*2
Air-Conditioning & Refrigeration Systems Headquarters, Biwajima Plant	Nishi-Biwajima-cho, Kiyosu-city, Aichi	○		Under way	A,B
Former Industrial Machinery Division	Nagoya, Aichi	○		Under way	A,C
Nagoya Aerospace Systems Works, Oye Plant	Nagoya, Aichi	○		Under way	B
Nagoya Guidance & Propulsion Systems Works	Komaki, Aichi	○		Under way	A,C
Kobe Shipyard & Machinery Works, Main Plant	Kobe, Hyogo		○	Monitoring	
Hiroshima Machinery Works, Kannon Plant	Hiroshima		○		
Takasago Machinery Works	Takasago, Hyogo		○		

*1 Volatile organic compounds: tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethylene, cis-1,2-dichloroethylene, 1,1-dichloroethylene, dichloromethane, benzene

*2 Major remediation methods include: (A) groundwater pumping, (B) soil gas absorption and (C) iron powder mixing.

Environment Report

Environmental Accounting

MHI undertakes quantitative measurements of its investment outlays and costs incurred to protect the environment within the performance of the company's business activities, and also measures the merits of its efforts toward that end. In doing so, the company makes reference to the "Environmental Accounting Guidelines" published by the Ministry of the Environment. In addition, since fiscal 2003 MHI has made estimates of the economic benefits (from reductions in CO_2 emissions) reaped when customers use the company's products.

Cost of Environmental Protection

Overall, environmentally oriented investments and costs decreased in fiscal 2005 from the year-earlier level, owing to reduced R&D outlays. Economic merits worth a total of 2.8 billion yen were reaped during the year, largely from income acquired through recycling and cost reductions achieved through energy conservation.

Estimated Reduction in CO_2 Emissions from Product Usage

MHI undertook an estimate of the amount of economic benefit accrued by users of its products measured in terms of reduced CO_2 emissions enabled by those products' usage. The most outstanding contribution was made by nuclear power plants, which emit no CO_2 whatsoever. Notably, in fiscal 2005 emission reductions increased significantly through the adoption of wind turbines and solar cells. Collectively they contributed to a total emissions cutback by 234,000 tons.

Environmental Protection Costs and their Economic Benefit

(Unit: million yen)

Cost Category	Activities in FY 2005	Investments		Costs		Economic Benefit			Environmental Protection Benefits
		2004	2005	2004	2005	2004	2005	Description	
1.Production activities		1,996	2,805	4,121	4,453	2,624	2,828		
①Pollution control	Maintenance and operation of wastewater and flue-gas treatment systems	532	1,170	1,565	1,644	432	368	Reduction in wastewater treatment costs	Reduction in emissions of air/water pollutants
②Global environmental protection	Energy conservation	1,374	1,423	563	590	434	561	Cost reduction from energy conservation	
③Recycling	Reduction in waste generation, recycling	90	212	1,993	2,219	1,758	1,899	Income derived from recycling, cost reduction from reduced waste generation	6,450-ton reduction in waste taken to landfill sites
2.Upstream/downstream costs	Recycling of household electrical appliances and container packaging	2	2	69	71	—	—		
3.Management activities	Development of environmental management systems, ISO Office, publication of *MHI Social and Environmental Report*	3	15	901	840	—	—		
4.R&D	Development of environment-friendly products	3,569	1,229	11,572	6,413	—	—		Development of diverse environment-friendly products
5.Public & social activities	Support of environmental protection initiatives, greening activities	12	9	442	460	—	—		
6.Environmental remediation	Soil remediation measures	251	105	813	517	—	—		Prevention of oil and chemical spills
	Total	5,833	4,165	17,918	12,754	2,624	2,828		

Total capital investments in FY 2005: 98.0 billion yen — Portion related to the environment: 4.1 billion yen (4%)
Total R&D outlays in FY 2005: 97.1 billion yen — Portion related to the environment: 7.6 billion yen (7.8%)

Economic benefit for customers (CO_2 reduction from MHI product usage in FY 2005)

Product		CO_2 Reduction (1000 t)	Amount (million yen)	Basis of Calculation
Nuclear power plants		52,410.00	495,275	Estimates based on actual output generated in FY 2005 by nuclear power plants built by MHI*1 *2
Thermal power generation	Conventional thermal plants	11.90	112	Estimates based on MHI's actual delivery record in 2005*1 *2 (compared to earlier MHI plants) Generation efficiency up 1.33% over 1990 level
	Gas turbine combined-cycle plants	152.70	1,443	Estimates based on MHI's actual delivery record in 2005*1 *2 (compared to earlier MHI plants) Generation efficiency up 4.17% over 1990 level
	Industrial power plants (biomass power generation)	440.00	4,158	Estimates based on MHI's actual delivery record in 2005*1 *2
Geothermal power plants		112.00	1,058	Estimates based on MHI's actual delivery record in 2005*1 *2
Renewable energy power generation (wind/photovoltaic power generation)		234.45	2,216	Estimates based on MHI's actual delivery record in FY 2005*1 *2
Gas engine cogeneration systems		377.24	3,565	Estimates based on MHI's delivery record in FY 2005 of MACH-30G gas engines and GSR series Miller cycle gas engines*1 *2* *3
Centrifugal liquid chillers		74.27	702	Estimates based on MHI's aggregated delivery record up to FY 2005 (compared to earlier models)*1 *2
Forklift trucks		37.07	305	Estimates based on sales record of "GRENDiA" in FY 2005 (compared to earlier models)*1

***1** In calculating monetary amounts, the Ministry of the Environment's pro forma value of 9,450 yen/t-CO_2 was used. ***2** Comparisons were made against the volume of CO_2 emissions per kWh of electricity used in Japan (=0.379 kg-CO_2: the actual result reported for FY 2001 by the Federation of Electric Power Companies of Japan). ***3** In addition to*2, comparisons concerning calorific amounts were made against heavy fuel oil A-burning boilers with an efficiency rating of 90%, assuming total utilization as steam and hot water.

Environmental Report

Countermeasures against Global Warming

MHI is taking dynamic steps to cut CO_2 emissions at its production facilities by integrating Japan's CO_2 emissions reduction target of 6%, under the Kyoto Protocol, into the company's targets for the medium and long term. Significant measures in this direction have already been implemented at numerous production facilities, including the adoption of cogeneration systems and equipment enabling outstanding energy savings and superlative operating efficiency. Going forward, MHI will continue to vigorously promote activities company-wide to ensure the achievement of a 6% reduction in CO_2 emissions, as its way of fulfilling its corporate responsibility to society.

Energy Conservation, Reduction in CO_2 emissions

For years MHI has undertaken a coordinated initiative targeted at reducing the company's CO_2 emissions. To save energy, for example, the company has taken measures to prevent air leaks, improve the operating efficiency of its compressors, and achieve more efficient operation of air-conditioning equipment. It has also modified its choice of fuels, adopted more efficient lighting and other fixtures, and introduced solar power generation equipment manufactured in-house. Together these efforts have enabled reductions in CO_2 emissions of some 2,000 tons per year. Unfortunately, as the company's production volumes have increased, in recent years the total output of CO_2 emissions has actually been in an increasing trend.

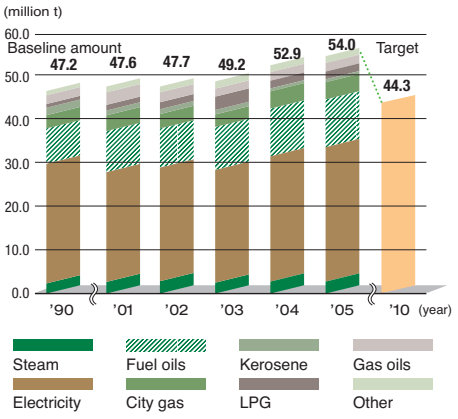
In a quest to trim company-wide CO_2 emissions more effectively, in fiscal 2005 MHI augmented its earlier initiatives with a program targeted at seven of its domestic works. Studies were perfor-med to identify the works' current energy management practices, how much energy they use for each specific purpose, and ways in which they might further save energy and reduce their CO_2 emissions. Additionally, in order to investigate, coordinate and implement such measures infallibly, the company's 12 domestic works were categorized according to type of energy usage and divided into three groups. Each group was then made responsible for developing plans delineating how they might save energy and cut their CO_2 emissions. In this way, the new initiative has been carried out company-wide.

In fiscal 2006 the newly developed plans will be reviewed in detail and schedules will be drawn up for their implementation. This will bring increased speed to MHI's efforts to achieve its environmental targets for the medium and long term.

CO_2 Emissions in Fiscal 2005

The company's vigorous activities to save energy and cut CO_2 emissions notwithstanding, in fiscal 2005 MHI's output of CO_2 was 14.4% above the level of 1990, the baseline year. The increase is largely attributable to increased fuel usage for sea trials in tandem with expanded ship constructions and increased energy usage in conjunction with constructions of new factories.

CO_2 Emissions Volume



Photovoltaic Power Systems

MHI began installing amorphous solar cell modules, developed in-house, in fiscal 2002. By the end of 2005, installations of this kind together offered a total generation capacity of 480 kW. In fiscal 2005, the company's photovoltaic facilities generated 392 MWh of power, corresponding to an annual reduction in CO_2 emissions by 149 tons.

10 kW solar system installed at the Yokohama R&D Center

Green Power

MHI is an active participant in the "Green Power Certification System"* promoted by Japan Natural Energy Co., Ltd. (JNE). Under this scheme, since April 2002 MHI has contracted to purchase 1MWh of wind-generated power from JNE annually for a period of 15 years. MHI uses this ecologically friendly "green power" at its Head Office Building and at the Mitsubishi Minatomirai Industrial Museum.

Green power certificate

*** Green Power Certification System** "Green power" refers to electric power that is generated without emitting large amounts of CO_2 and without harming the surrounding environment: for example, power generated using renewable energies such as wind, water and biomass. It is traded at a price that factors in added value attributable to alleviation of environmental burdens through reduced use of fossil fuels, reduced emissions of CO_2, etc. JNE issues certificates to green power purchasers, showing the amount of green power used in their operations, as a way of encouraging enterprises and local governments to take further voluntary measures for environmental preservation.

Measures to Reduce Greenhouse Gases

Besides seeking to reduce CO_2 emissions owing to energy usage, MHI is also implementing measures to cut emissions of other greenhouse gases: methane, nitrous oxide (N_2O), fluorocarbons and sulfur hexafluoride. Methane and N_2O are emitted in tandem with fuel combustion, while fluorocarbons are produced, for example, during the manufacture of products that use fluorocarbons as their refrigerant. Until now MHI has taken steps to curb such emissions at each site and in individual areas of its activities, but now the company is launching even more vigorous initiatives based on revisions to legislation enacted to promote measures to counter global warming.

Measures to Curb Energy Use in Distribution

Commencing in April 2006, MHI has strengthened its system for managing energy usage during the transportation of its products, etc. A new position has been created specifically to take charge of energy management. Duties include calculating energy usage based on transport distance and load weight in order to identify total energy usage company-wide, and formulation of proposals for achieving greater rationalization in energy utilization.

Measures for Improving Office Environments

In June 2005 MHI joined the national "Team Minus 6%" campaign, which targets reducing greenhouse gas emissions by 6%, compared to 1990 levels, by 2012. Under the campaign, which is promoted through posters strategically placed in reception areas, entrance vestibules, etc., office air-conditioning systems were set to 28-C in summer and employees were encouraged to dress informally, in tandem with the "Coolbiz" movement. In winter, temperatures were set to 20-C and employees were urged to dress more warmly than before, all as part of MHI's company-wide effort to contribute to the prevention of global warming.

As an adjunct to this initiative, the company also called on employees to conserve water, turn off unnecessary lighting, etc. It also encouraged employees to implement energy-saving measures at home: for example, by monitoring their energy savings, purchasing environmentally friendly products, and shutting off car engines when stopped in traffic, etc.

TOPICS Examples of Energy Conservation Activities at MHI Works

In fiscal 2004, the Takasago Machinery Works was the target of a general inspection, the results of which were made known that November. The judgment rendered was that the materials submitted by the Takasago works for inspection purposes were themselves in need of improvement, including the need to indicate items requiring rectification and to set an order of priority for the works' various undertakings. In response, it was decided to concentrate on analyzing the materials and simplifying maintenance and inspection tasks as stipulated in management guidelines, and to make relevant proposals and institute improvements. Introduced below are some of the activities to save energy carried out in fiscal 2005.

①Measures against Factory Air Drainage

Because compressed air is warmer than the atmosphere, it is cooled when piped; the resulting condensation builds up in the piping, causing it to corrode. In addition, compressed air also contains remnants of the lubricating oil used in the compressor, and conventionally air was piped together with this oily content and rust. At the factory exit, six major locations where large volumes are consumed, and supply points, temperature and pressure measurements were taken of the drainage in the piping and at the supply and end points, and estimates were made of pressure loss. The results revealed ① production of drainage below 36-C, ② an average pressure loss of 0.054 MPa, and ③ a pressure loss attributable to drainage in the piping of 0.0254 MPa.

As a countermeasure, equipment for removing moisture and oil, incorporating compressed air heaters, was installed at the supply points. Subsequent measurements taken at the same points as earlier ① confirmed that the air was now free of drainage, and ② showed that the average pressure loss had decreased by 0.03 MPa, to 0.024 MPa, thereby enabling a reduction in power requirements by some 130 MWh per year.


Equipment for removing moisture and oil, with compressed air heater

②Measures against Factory Air Leaks

As a countermeasure against air leakage – an aspect that was earlier neglected because it causes no physical harm to humans and piping installations are located at considerable heights – a diagnostic check was carried out using special equipment that detects the supersonic waves generated at times of leakage. At the same time, employees were assigned to accompany the monitoring staff at the checking sites to repair any leakage points whenever possible. This initiative enabled a reduction in compressor operating time, and air leaks were rectified that would otherwise have cost the company the equivalent of roughly ¥8 million per year. In addition, a check for oxygen, argon and other gases led to the discovery of leaks costing the equivalent of approximately ¥150 million per year. Going forward, plans call for repairs and leak monitoring to be carried out on a regular, scheduled basis.

③Conversion of Forging Furnace Fuel and Retrofitting of Waste Heat Recovery Burner

Conventionally LPG had been used as the fuel, but superannuation of the carburetors, etc. made it necessary to take remedial steps. These included the adoption of a waste heat recovery burner and a fuel switch to city gas. Together these measures reduced energy usage by some 60% per output volume, in parameters of thermal volume.


Waste heat recovery burner

Environmental Report

Management of Chemical Substances

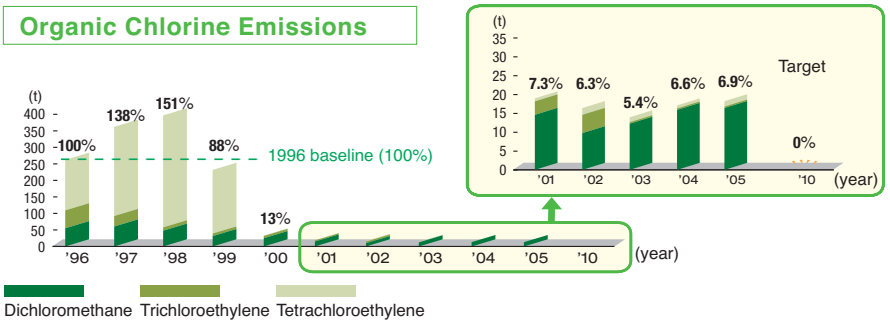
MHI takes every step possible to manage the chemical substances required for its production processes in ways that will enable their safe usage and storage. All works make effective use of "Material Safety Data Sheets" (MSDS*1) to ensure full safety for both the customer and company employees. Efforts are also being taken to curb the use and emission of organic chlorines and other precarious chemical substances through the development of alternative manufacturing processes and changeovers to alternative substances.

Reduced Reliance on Organic Chlorines

Earlier, MHI set targets aiming for a combined 95% reduction in emissions of tetrachloroethylene, trichloroethylene and dichloromethane by 2005, compared to the 1996 level, and zero emissions by 2010. Although steady progress has been achieved by modifying manufacturing methods, switching to water-based cleansers, etc., as of the end of fiscal 2005 the company failed to reach its initial target, having reduced emissions by only 93.1%. The failure owed to increased usage of dichloromethane, a removal agent, in tandem with expanded production volumes.

Evaluation testing and other initiatives are currently under way toward settling on alternative agents to replace dichloromethane. Going forward, the company will continue verifying other agents' effectiveness and also probe new methods for accomplishing the tasks required.

Organic Chlorine Emissions

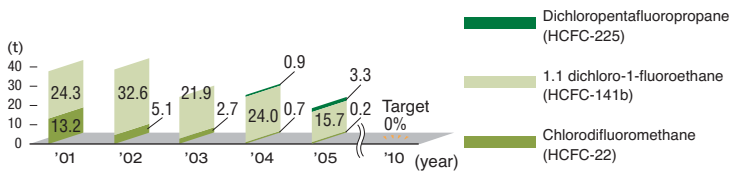


Ozone-depleting Substances

MHI uses a number of hydrochlorofluorocarbons (HCFC), for purposes such as equipment cleaning, that are known to deplete the ozone layer: namely, chlorodifluoromethane (HCFC-22), dichloropentafluoropropane (HCFC-225) and 1,1-dichloro-1-fluoroethane (HCFC-141b). In fiscal 2005, total emissions of these substances increased as a result of expanded production in aerospace operations.

In the coming years, the company will take increasingly rigorous steps to reduce use of these substances, through adoption of substitute agents, in its quest to achieve its goal of eliminating their usage entirely by 2010.

HCFC Emissions



Emissions of Substances Subject to PRTR

In fiscal 2005, MHI emitted a total of 2,237 tons of substances subject to PRTR*2 compliance (dioxins excluded). Roughly 96% consisted of emissions of xylene, toluene and ethylbenzene, substances primarily used in painting and cleaning applications. Although the company is working to reduce these emissions through measures such as switching to water-based paints, the task is proving a challenge. Particularly with respect to xylene, which is used for painting ships, shipowners habitually specify that xylene should be used; that preference, together with an increasing volume of shipbuilding, is making use of alternative agents difficult.

Release and transfer data for all substances subject to PRTR compliance can be viewed at the following URL:
http://www.mhi.co.jp/env/report/chemist_e.html

Disposal of Equipment Using PCBs

Previously, MHI hoisted a target aimed at terminating the use of all equipment (transformers, condensers, etc.) using polychlorinated biphenyls, i.e. PCBs, by 2010 (see page 46). In line with that target, initiatives have been taken at all company works to create storage areas for such equipment and to carry out proper storage. However, in order to reduce risk of environmental contamination along with equipment deterioration, etc., now the company has decided to undertake harm-free disposal of equipment, either currently in usage or storage at the domestic works, that use PCBs in heavy concentrations ahead of the legally imposed deadline. Already, in March 2006 MHI registered its disposal of equipment using PCBs (transformers and condensers) with the Japan Environmental Safety Corporation (JESCO), a special entity wholly funded by the Japanese government. Today the company is targeting to complete all related disposals by 2010.

***1 MSDS** Material safety data sheets are used to provide information relating to chemical substances when such substances or related products are shipped to other business operators. The sheets describe ingredients, properties, handling methods, etc., in order to ensure proper management of chemical substances.

***2 PRTR**(Pollutant Release and Transfer Register) The PRTR system, instituted in 1999, requires manufacturers and users of toxic chemical substances to identify, tabulate and make public data concerning the sources and volumes of emissions of such substances, the amounts of such substances removed from manufacturing plants (including as waste), etc. Reports must be submitted to the administrative authority once each year.

Environmental Report

Resources Conservation and Waste Management

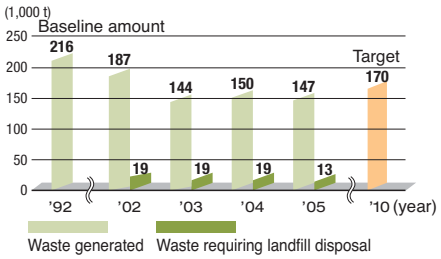
MHI is taking proactive measures to conserve resources of all kinds and manage wastes produced at company facilities. To achieve optimal recycling, the company undertakes vigorous sorting of all recyclables, works to secure stable recycling contractors, and pursues sharing of information on recycling operators. The company also holds company-wide meetings on how to achieve zero emissions in line with its aim to achieve that target by 2010.

Curbing Waste Generation, Release and Disposal

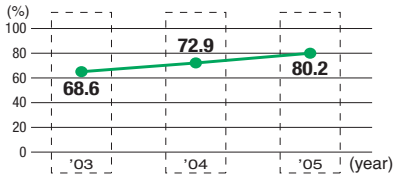
Earlier, MHI hoisted a target aiming to reduce the volume of the company's waste to under 170,000 tons by 2010, and toward that goal vigorous initiatives were taken to reduce waste output and promote recycling within the various works. As a result, the target was achieved back in fiscal 2003. As of fiscal 2005, waste output has been further reduced to 147,000 tons.

In conjunction with its target to achieve zero waste emissions at all MHI works by 2010, the company is striving to curb the volume of landfill necessary to cope with its generated wastes. Four works have now succeeded in achieving the zero emissions goal: the Yokoyama Dockyard & Machinery Works, Takasago Machinery Works, General Machinery & Special Vehicle Headquarters, and, in fiscal 2005, the Nagoya Guidance & Propulsion Systems Works.

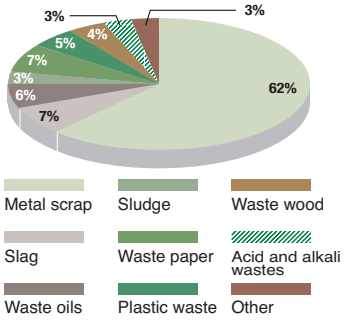
Waste generation and disposal volumes



Recycling rate

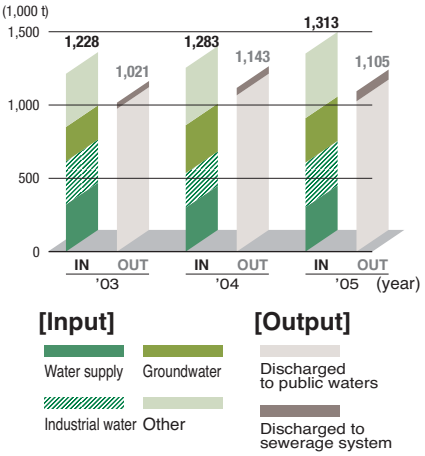


Waste generation by material type (% of total weight)

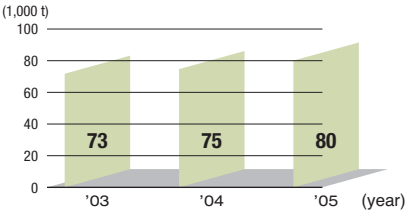


Water and Paper Resources

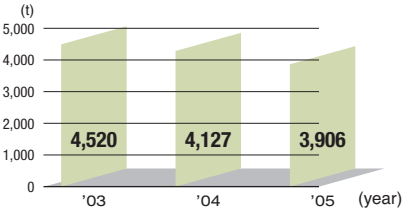
Water usage and discharge



Water recycling volume



Paper usage volume



TOPICS

Nagoya Guidance & Propulsion Systems Works Achieves Zero Waste Emissions

Traditionally the Nagoya Guidance & Propulsion Systems Works dealt with wastes by undertaking thorough sorting, recycling waste oils (through separation of oil and water content), and transferring shredded documents and the like to recycling operators. However, because the works generates wastes of many different varieties in small amounts, most waste was decontaminated and then sent to landfill sites.

To rectify that situation, starting in 2004 the works aggressively expanded its network of recycling operators and promoted recycling using the methods described in the chart at right. Thanks to these efforts, in February 2006 the Nagoya Guidance & Propulsion Systems Works successfully achieved the company's zero emissions standard. Going forward, further efforts will be made at material recycling: for example, through conversion to raw materials.

Recycling team

Recycling at Nagoya Guidance &Propulsion Systems Works

Category		Intermediate treatment	Recycling format
Paper	Used paper	Collection	Raw materials for papermaking
	Newspapers		
	Magazines		
	Cardboard		
	Documents	Shredding, solidification	Shredding, solidification Raw materials for paper-making (toilet paper)
Flammable wastes	Dust, cigarette butts, etc.	Incineration	Heat recovery (use in heated swimming pool)
Sludge	Soluble oils in tapwater	Conversion to compost	Agricultural compost or soil enhancerToxic sludge
	Toxic sludge	Decontamination followed by melting	Roadbed material
Waste oils	Oil rags	Incineration	Roadbed material
	Water-soluble waste cutting oil	Oil/water separation	Recycling
	Paints	Incineration	Raw material for cement
	Toxic waste oils		
Acid and alkali wastes (including toxic)			
Grindstones		Crushing	Recycled polishing materials, abrasives, roadbed material
Used fluorescent tubes		Recovery of glass, metals, mercury	Raw materials
Drycell batteries		Recovery of lead, iron, etc.	Raw materials
Glass, ceramics		Melting	Steel products, roadbed material
Slag			
Plastic waste		Crushing	Power plant fuel

Environmental Report

Environmental Contributions through Products

In order to contribute to social progress through its business activities, MHI develops and provides a broad array of products to protect the environment, including equipment to prevent environmental pollution of all kinds. In addition, in other product areas also, the company always creates products fabricated to be environmentally friendly throughout their entire lifecycle: from initial design and manufacture through usage and disposal.

Basic Guideline on Production of Environmentally Friendly Products

In September 2005 MHI formulated a "Basic Guideline on Production of Environmentally Friendly Products" to serve as a basic rulebook for producing environmentally sound products on a continuing basis. The guideline applies to all company products and outlines how MHI should proceed in making products that will lighten the environmental burden. Besides calling for observance of all relevant laws and ordinances, the guideline also describes how the company should take swift action to adopt regulatory trends, and how it should assess environmental impact throughout each product's lifecycle – from procurement of materials and parts to actual manufacture, usage and final disposal.

The guideline is based on ISO/TR14062, the International Organization for Standardization's framework created in 2002 on "Environmental management – Integrating environmental aspects into product design and development." However, it also responds to the demands generated by made-to-order products, which form the core of MHI's product configuration. To illustrate, MHI's guideline also includes environmental assessment items that are unique to the company's products. In addition, to lend support to the actual production of environmentally friendly products, research is under way at the R&D centers into support tools (systems) for creating environmentally compatible product design.

Initiatives in Green Procurement*

As an outgrowth of environmental laws and regulations enacted in Europe – including directives pertaining to hazardous substances (RoHS), end-of-life vehicle (ELV) recycling, and registration, evaluation and authorization of chemicals (REACH) – today there is a growing call globally for the corporate sector to properly manage chemical substances contained in its products as part of its social responsibilities.

In July 2006, a directive calling for "Restriction of Hazardous Substances" (RoHS) went into effect which prohibits the import into Europe of any electrical and electronic products containing six specified hazardous substances (lead, mercury, cadmium, etc.). In order to comply with this directive, manufacturers are required to engage in "green procurement," i.e. procurement of materials and parts from suppliers who are able to attest to the fact that they do not contain the specified chemical substances. At MHI, the first products subject to RoHS scrutiny are its air-conditioners. Today the company is moving forward toward RoHS compliance with the creation of a management system for chemical substances contained in these products within the Air-Conditioning & Refrigeration Systems Headquarters, where they are made. In addition, a guideline for managing chemical substances contained in such products is being drawn up, to be used in collaboration with MHI suppliers.

Domestic restrictions affecting the management of chemical substances, including new laws and regulations, are scheduled to be strengthened ahead. MHI aims to pursue green procurement ever more vigorously by expanding the initiatives already under way at the Air-Conditioning & Refrigeration Systems Headquarters, strengthening the company's management of chemical substances contained in its products, and working ever more closely with its suppliers.

Measures against Asbestos

An investigation into asbestos use in MHI products revealed that the company has been using asbestos in applications such as steampipe gaskets and pressure-resistant parts sealing; these usages are permitted under law because of the difficulty in securing viable substitutes. However, based on a commitment to cause no harm attributable to asbestos relating to its business activities, MHI is now working assiduously to switch to asbestos-free products in order to fulfill its corporate social responsibility.

Specifically, with regard to products that have already been delivered, the company is conveying information on the use of asbestos in those products to the customer and proposing replacement with asbestos-free parts, etc. Concerning products newly manufactured and ready for delivery, the affected parts are being replaced prior to shipment. In cases where no alternative parts currently exist, a program is under way to acquire the needed substitutes. An action plan calling for substitution of 712 items※ has been drawn up, and investigations, testing and verification are in progress toward the achievement of asbestos-free replacements, with a final target date of the end of fiscal 2007 (March 2008).

In addition, a liaison conference specifically for promoting asbestos alternatives has been established at the Head Office general manager level to monitor the overall initiative. (During fiscal 2005, meetings were convened in September 2005 and March 2006.)

Going forward, MHI will continue to strive to create environmentally friendly products through the development of alternatives to asbestos in line with the company's action plan.

※268 items in fiscal 2005, 440 in fiscal 2006, and 4 in fiscal 2007.

*** Green Procurement** In addition to selective purchasing of products that are friendly to the environment, green procurement makes the environmental friendliness of the supplier itself a criterion for selection as a procurement partner.

Remediation of PCB-contaminated Soil

The PCB Issue

Polychlorinated biphenyls – better known as PCBs – are organic compounds first created in Germany in 1881 and subsequently industrially produced in the United States. In recognition of their outstanding properties, especially insulation and nonflammability, PCBs were for many years used in a broad range of applications including transformers, condensers and other electrical equipment. Then in the 1960s, the toxicity of PCBs became a social issue – in Japan, particularly as a result of the "Kanemi oil poisoning incident" of 1968, when mass poisoning occurred from ingesting PCB-contaminated cooking oil – resulting in a ban on the manufacture or importation of PCBs in 1974.

Initially, incineration was the only method authorized for disposing of PCB wastes in Japan. However, because of the possibility that such incinerators may, depending on their operating conditions, emit dioxins, obtaining the approval of local residents to erect such facilities was a challenge. As a consequence, during the past 30 years or so, PCB wastes in Japan have gone virtually untreated and been kept in storage. Through 1972, a total of 54,001 tons of PCBs were used in Japan, some of which has been lost or gone missing, causing concern today over PCB contamination of the environment.

Initiatives to Remediate PCB-contaminated Soil

The potential for soil contamination – for example, in cases of PCB leakage from superannuated transformers – is particularly high, and for a long time the development of a safe and environmentally friendly technology for treating PCB-contaminated soil was eagerly awaited. In 2001 MHI successfully completed such a technology, known as "solvent extraction." An integration of MHI's expertise in organic solvent gas adsorption equipment and the technologies of the U.S. enterprise TERRA-KLEEN Response Group, Inc. (the present Sonic Environmental Solutions Corp.), solvent extraction decontaminates soil by safely extracting PCBs without heating or pressurizing. In 2004, the technology won the Chairman's Prize for Excellent Environmental Systems presented by the Japan Society of Industrial Machinery Manufacturers.

Today, MHI provides services in remediation of PCB contaminated soil as an integral element of its business operations.

TOPICS Remediation of Dioxin-contaminated Soil in Tokyo

In February 2000 dioxin soil contamination was discovered in Tokyo's Ota ward, resulting in the district being designated as Japan's first area subject to legislation delineating special measures to be taken against dioxins, which are components contained in PCBs. MHI was contracted to perform soil remediation using solvent extraction technology, and this project was successfully completed in March 2006.

In this case, the soil in the designated area had been contaminated by dioxins resulting from PCB dumping at the site. As the source of the contamination was PCBs, use of MHI's solvent extraction method was feasible. The company's remediation method was adopted by the Tokyo Metropolitan Bureau of the Environment in 2005. Owing to the enormous volume of soil requiring decontamination – 1,800 tons – a brand-new facility had to be created offering 10 times the processing capacity of the previously existing facility. The decontamination work was carried out on property owned by the Tokyo Metropolitan Government within Ota ward.

During the decontamination process, many visitors came to see the operation in action, and MHI is both confident and grateful that this opportunity led to a broad understanding of the safety and assurance of solvent extraction as a method for decontaminating PCB-defiled soil.

Going forward, MHI will continue to make a powerful contribution to remediation of PCB-contaminated soil with optimal safety and assurance, at normal temperatures and pressures, in order to ease the burden on the global environment posed by PCBs.

Extraction bin

Large-scale PCB soil remediation facility in Ota ward, Tokyo

Solvent refining unit

Social Performance

In a quest to realize a world in which people can live safely, securely and comfortably, MHI proactively engages in dialogue with its diverse stakeholders and in a wide array of CSR activities.

Social Performance

Commitment to Stakeholders

Communication with stakeholders of every kind is vital to the promotion of CSR activities. Described in the following pages are MHI's respective commitments to the various groups it recognizes as its stakeholders.

MHI has a strong commitment to the myriad local communities worldwide where it conducts its business activities or to which it supplies its products. To fortify its relationships of trust with those communities, the company works in diverse ways to achieve active communication.

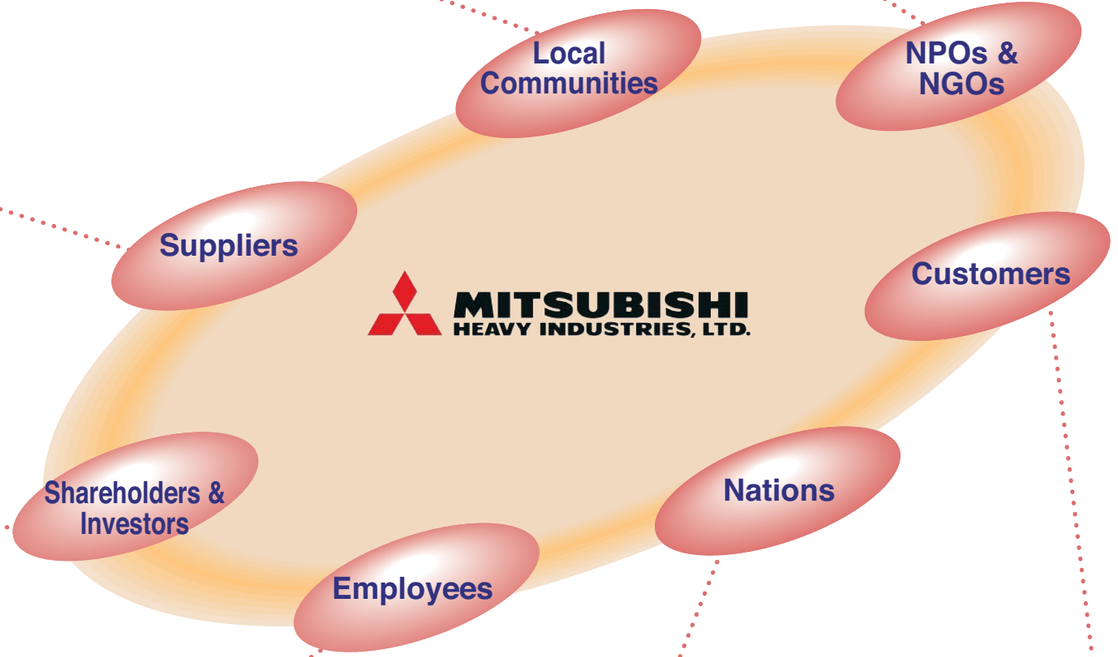
▶ Pages 39, 57-60

MHI believes it plays a vital role in developing a sustainable society, and in order to grow as a company that makes social contributions, it recognizes the importance of listening to the opinions of specialists at non-profit and non-governmental organizations across a broad spectrum. Partnerships of these kinds will continue to be accorded high importance in the future.

▶ Pages 9–13, 58

MHI believes that "fairness" is the starting point of all company procurement activities. The company carries out its business with suppliers worldwide with complete fairness and impartiality.

▶ Pages 33, 45, 56



MHI aspires to achieve active communication with its shareholders and investors through various means including information disclosure. It is also creating enhanced opportunities for dialogue in a quest to forge relationships of trust.

▶ Page 55

MHI constantly strives to develop its human resources from a long-range perspective in order to advance each employee's capabilities and energize the company. Measures are also taken to improve employees' work conditions and ensure their human rights and safety.

▶ Pages 31-33, 51-54

MHI contributes to national development through participation in national projects and provision of its products. In the performance of its business activities abroad, the company obeys all local laws and regulations and complies with local social norms.

▶ Pages 21-24, 34

MHI considers its customers to be not only those who take direct delivery of its products and services, but also everyone who benefits from those products and services. The company will therefore continue to pursue ever closer communication with broad-based society.

▶ Pages 19-24, 49-50

Social Performance

Commitment to Our Customers

MHI's underlying stance is that the customer always comes first, and that the company is obligated to be an innovative partner to society. In keeping with this stance, MHI pursues the creation of products from the customer's perspective. By integrating technologies and continuously enhancing the company's organizational strength, as a united entity MHI carries out a wealth of activities aimed to boost customer satisfaction can acquire the customer's satisfaction, and then to proceed to act quickly upon that answer as a way of strengthening the ties and relationship of trust between MHI and the customer. CS activities are MHI's management vision and its business strategy, for a business endeavor that cannot win the customer's satisfaction is doomed to failure. MHI will thus continue to manage its operations in the years ahead with a constant eye on the customer's perspective.

Constant Eye on the Customer's Perspective

"We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society." This is the first commitment enumerated in MHI's corporate creed. The company believes that in order to survive in the 21st century, it is supremely important for MHI to cultivate a customer-oriented corporate culture in which the company continuously provides products and services that respond to its customers' trust.

During its long history stretching back more than a century, the name "Mitsubishi" has won the trust of its customers through the provision of products and services recognized for their superior performance, reliability and price-competitiveness, all made possible by outstanding technologies. Today, however, the needs of MHI's customers and society at large are changing dramatically, and if the company aims to approach its corporate task from the customer's perspective, it must consistently consider whether its products truly meet their needs and whether they are worthy of earning the customer's recognition of their high added value.

Above all, it is this commitment to create products from the customer's perspective that is vital to ensure MHI's survival in these turbulent times. The company is determined to always keep in mind that it is by creating products and building a corporate structure supported and trusted by the customer and by society – in other words, by winning the customer's satisfaction – that MHI will enhance its competitive strength.

MHI believes that in addition to devoting its full resources to product development, it is through ongoing efforts to unite its technological and organizational strengths from the customer's perspective and apply those strengths further that the company's technological powers will come to be put to use in an ever broader range of applications. Every MHI employee is keenly aware that every aspect of the company's everyday business is linked to the customer and to society, and therefore in the performance of all activities gives highest priority to making positive contributions both to the customer and society.

It is in accordance with this way of thinking that MHI undertakes a host of activities targeted at customer satisfaction (CS). To realize CS, it is necessary to mull at length just how the company

CS Activities: Organization and Undertakings

CS Promotion Office

The CS Promotion Office, working under the Corporate Planning Department overseen by the Presidential Administration Office, coordinates CS policies company-wide, provides support to CS initiatives in each division, and conducts training designed to enhance CS awareness. Under its direction, offices to promote CS activities have been set up at the various works and division headquarters. Also, efforts are continuously made to learn the customer's views through questionnaires and an open bulletin board on the company's website.

Outstanding Examples of CS Activities Cited at 4th CS Forum

Most Outstanding Award	"CS Activities to 'Move' the Customer": newspaper offset presses (Paper & Printing Machinery Division)
Outstanding Awards	"Structural Reform and CS Activities in the Injection Molding Machine Business: Faster Response to Customers and the Market, and Product Selection and Concentration" (Mitsubishi Heavy Industries Plastic Technology Co., Ltd.)
	"Expanded Business in Servicing Boilers: Development from Passive to Proactive Services" (Nagasaki Shipyard & Machinery Works)
	"Development of the New MVR Series of Gantry-type Five-face Large Machining Centers" (Machine Tool Division)

4th CS Forum Award Ceremony


Introduction of outstanding examples of CS activities at 4th CS Forum

CS Forum

To enhance customer satisfaction, CS activities at MHI are undertaken by teams formed for specific products or sections within the organization. Once each year, a company-wide CS Forum is conducted to introduce outstanding examples of their achievements. The aim in holding the forum is to promote sharing of excellent results in CS activities by all division headquarters and works.

CS Liaison Conference

Every two months, a company-wide CS Liaison Conference is held at which the various CS activity offices at the division headquarters and works come together to exchange information about their CS initiatives. Through these exchanges, efforts are made to actively incorporate examples of excellent activities undertaken in other sections of the company: for instance, developments in benchmarking, CS action plans, etc.

CS Awareness Education

MHI believes that raising CS awareness among all employees is indispensable in order to firmly set in place a corporate structure oriented to the customer. Toward that end, a variety of educational opportunities are provided, including basic training in CS, management quality training and marketing training.

In-house Reforms Targeting Safety and Security of Nuclear Power Generation

In response to the accident at the Mihama nuclear power plant in August 2004, in which breakage occurred in the secondary piping of Unit 3, MHI has been actively pursuing improvement of its corporate culture and organizational approach relating to the safe operation of nuclear power facilities. Amid those undertakings, however, in February 2005 an incident took place in which, in the process of manufacturing the replacement piping, improper revisions were made to the pipe marking. In recognition of the seriousness of this incident, MHI is taking the following steps to fortify its activities targeted at preventing a recurrence of any incident of that nature.

① Activities to Prevent a Recurrence

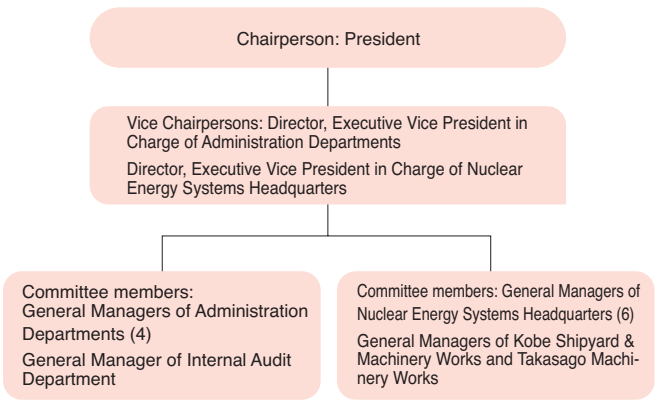
- Through instructions and messages by the President and other officers as well as activities in education, training, etc., the company is working to ingrain a commitment to accord highest priority to and enforce complete compliance regarding the safety of nuclear power operations.
- By way of forging a base for preventing the occurrence of any impropriety, the company is restructuring its quality management system. Specific initiatives include clarification of the chain of command between instructions given by top management and directives issued by the various division headquarters and works, and improvement in administrative processing, including the framework for on-site management.

② Promotion Structure and Activities

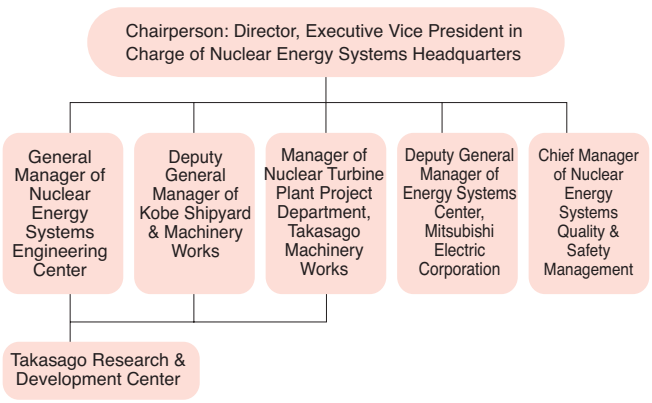
- Progress in the advancement of specific activities targeted at securing the safe operation of nuclear power facilities is monitored by a specially formed committee known as “The Managing Board for Innovation in Nuclear Business.” The committee, chaired by the President, has convened on twelve occasions since its inception in December 2004.
- An office dedicated to management of quality and safety in the nuclear power systems promotes vitalization of activities designed to prevent the occurrence of improprieties through improvement in the quality of related information processing and reinforcement of internal management functions. Activities are monitored by the Internal Audit Department under the direct charge of the President.
- In March 2005 MHI established a study committee dedicated to issues relating to maintenance. The “Mitsubishi Maintenance Study Committee” is contributing to securing the safe operation of nuclear plants through cooperation with the customer. Initiatives include formulating preventive maintenance plans for aging plants and issuing proposals to the electric power providers who operate the nation’s nuclear plants. To date the committee has convened on four occasions.

Going forward, all MHI employees, from the President down through the ranks, will continue to undertake activities to improve and set firmly in place a corporate culture focused on safety in nuclear power operations, as the company’s way to earn the trust of all society.

Managing Board for Innovation in Nuclear Business



Mitsubishi Maintenance Study Committee



Social Performance

Commitment to Our Employees

MHI believes that human resources are the company's most important asset and that the growth of each employee enhances the company's comprehensive strength. Under a basic personnel policy targeted at preparing the soil in which each and every MHI employee can develop and thrive, the company continuously pursues the formation of a corporate culture in which all individuals can apply their capabilities and personal strengths to the fullest.

Full Utilization and Cultivation of Human Resources

Initiatives in Support of Ability Enhancement and Self-Actualization

MHI actively strives to develop its human resources through an array of educational programs, starting from on-the-job training (OJT) for new employees to programs for current employees at different levels and possessing specific skills. Furthermore, in response to today's increasing diversity in business formats – which today encompass everything from export operations to international business collaboration, to overseas production – MHI actively pursues the cultivation of truly internationally minded employees by offering them opportunities in foreign language training and overseas study.

Cultivation of Engineers and Technicians from a Long-range Perspective

MHI believes that in the manufacturing industry engineering prowess and technical skills, along with the reliable products born from them, are achieved through the knowledge and expertise that employees accumulate over many years. In line with that conviction, the company provides its engineers and technicians systematic and finely tuned educational programs throughout the long course of their careers.

Initiatives to Develop and Apply the Abilities of Female Employees

MHI makes continuous efforts to create an environment enabling its female employees to make full use of their abilities and thereby vitalize the workplace. As part of that effort the company regularly holds career improvement seminars specifically for its female employees.

In-house Recruiting System

MHI launched an in-house recruiting system in 1992 to give employees opportunities to pursue new avenues within the company. Among the opportunities offered are the chance to work in a new area of business or new field, to participate in national projects, and to reinforce personnel working in growth areas. Applications are invited four times each year. In fiscal 2005, recruiting was carried out for four endeavors, resulting in six employees transferring in-house to new jobs.

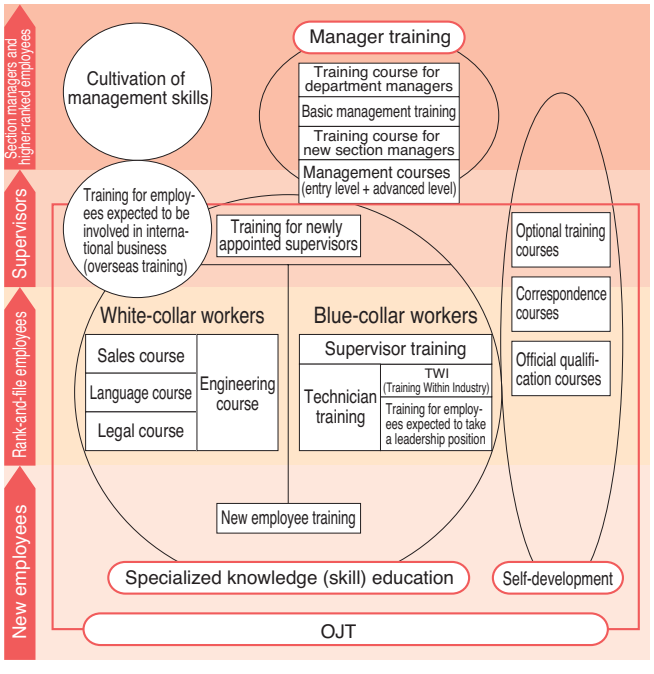
Encouragement of Dialogue, Promotion of Target Management

At MHI, a variety of measures are taken to encourage dialogue between employees and their supervisors as a way of deepening mutual understanding. By clarifying, mutually, the roles they are expected to fulfill, the work issues needing to be addressed, and areas in which focused effort needs to be taken, work incentives are aroused and employees' motivation toward their jobs is enhanced, thereby creating an environment in which all employees can make full use of their capabilities.

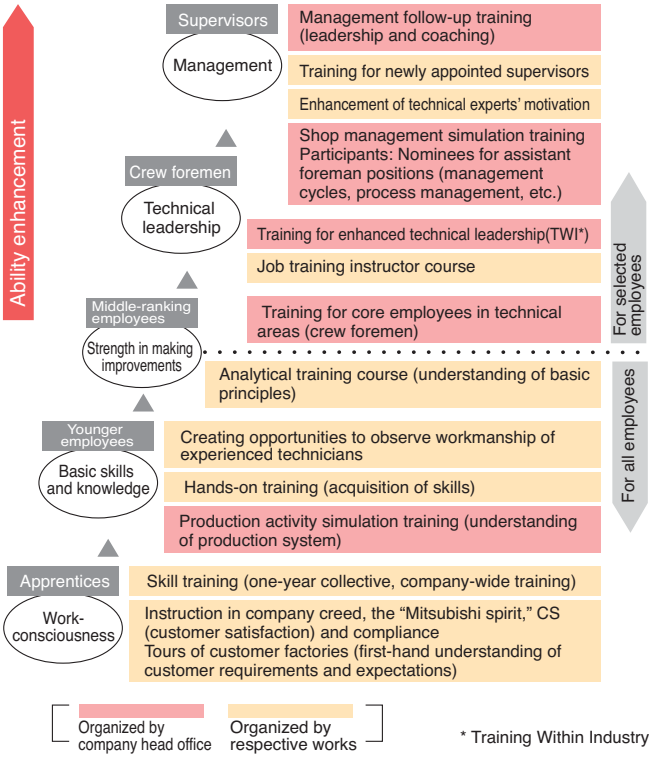
White-collar Employees

A target management system is adopted at MHI for employees working in white-collar areas. Every six months, at the start of a new half-year term, individual targets are set for

Employee training scheme



Education scheme for blue-collar workers



* Training Within Industry

each employee; then at the end of the term, evaluations are made of the degree to which those targets have been achieved. Because each employee's own targets are linked to the targets set for the overall work division, they are always demanding in their content. The target-setting and achievement-evaluation processes are carried out through dialogue between the employee and supervisor. Discussions focus on the appropriateness of the targets, points meriting commendation, and points in need of improvement.

Blue-collar Employees

Once each year, dialogue with employees in blue-collar positions is conducted based on use of "communication sheets." Employees and their superiors discuss the work situation and future initiatives and exchange opinions concerning the employee's individual job and the work environment. The aim is to enable mutual awareness and deepen mutual understanding as a way of fostering solidarity and strengthening job management.

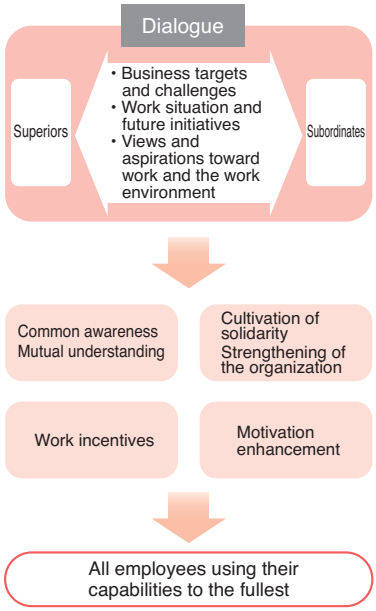
"360° Research": A Program Targeted at Middle Managers

MHI carries out a program called "360° Research" which is targeted at promoting reforms in the way middle managers both think and act. Under the program, research is conducted into the behavior characteristics of section managers as judged by their superiors, colleagues and subordinates. Results are fed back to the section manager in one-on-one talks with their superior, to encourage the individual's awareness and lead to self-reform. In this way, by maximizing systematic output, MHI is taking steps to cultivate managers who possess strong management skills enabling them in turn to cultivate and enhance the capabilities of their subordinates.

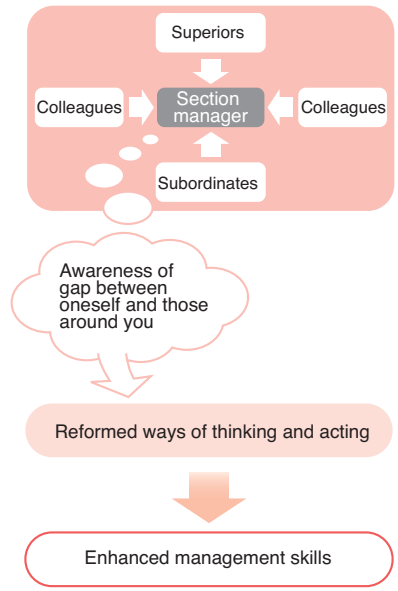
Fostering Mutual Trust and Understanding between Labor and Management

MHI believes that communication between management and employees is of extreme importance for carrying out the company's business activities. In line with that thinking, full use is made of the company's intranet, in-house publications and other resources to disseminate information and messages from top management to all employees as swiftly as possible. In addition, to cultivate a good relationship with the labor union, labor-management consultations are used as a forum both for management to convey management policies and strategies and to hear the views of the union for integration into management practices. Consultations are conducted not only between representatives of the Head Office and labor headquarters, but also at all levels within the company's works and their respective workplaces, covering an extensive range of topics. Through these active discussions, the company is taking concrete steps to foster greater mutual trust and understanding between labor and management.

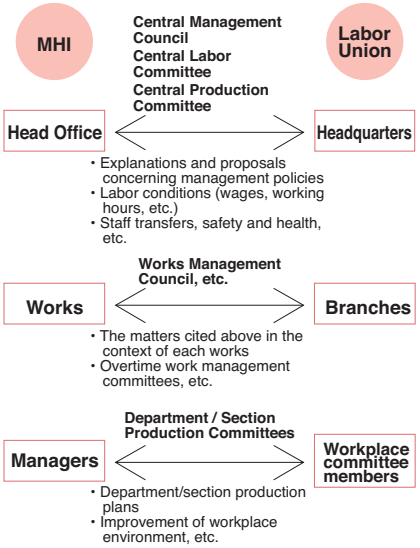
Active dialogue



"360° Research"



Labor-management councils



On-the-Job Accidents and Preventive Measures

Initiatives to Promote Employees' Safety and Health

MHI embraces a basic policy on employee safety and health founded on the following three commitments: 1) "Always hold to the conviction that life is precious, and carry out safety-first measures appropriate to each position and place"; 2) "Devote every effort to safety in creating outstanding products that contribute to the development of society"; 3) "Maintain awareness that sound health is the basis upon which all else rests, and ensure that all employees have a comfortable work environment enabling them to be sound in body." In line with these principles, the company observes all laws and regulations pertaining to safety and health and undertakes a variety of activities in these areas involving the unified efforts and management and all employees.

Measures to Reduce On-the-Job Accidents and Injuries

MHI implements an occupational health and safety management system company-wide whereby activities are carried out at each works to sort out causes of work-site accidents and injuries, including near-accidents, and take corrective actions. Efforts are made to reduce the incidence of accidents and injuries by encouraging all employees to promote health and safety management in their respective positions, and to take corrective measures where appropriate and evaluate their results as a way of eliminating accident-causing factors. On another level, MHI also fulfills its responsibility both to employees and to the local community by refurbishing or replacing superannuated manufacturing facilities in order to prevent accidents on large scale.

Safety education class

Measures against the Harmful Effects of Asbestos

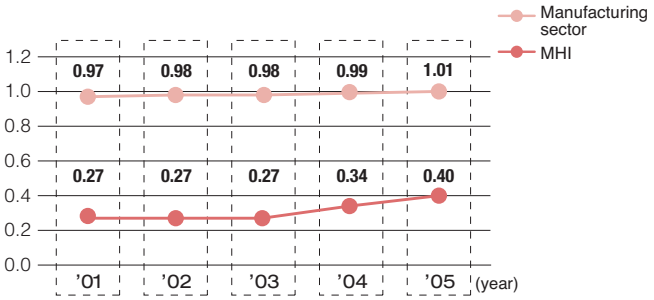
In response to rising public concern in Japan over the health-damaging effects of asbestos, on July 1, 2005 the "Ordinance on Prevention of Hazards due to Asbestos" came into effect. In coordination with the new regulations, MHI has developed a system that provides current and past employees and their family members, as well as residents living in close proximity to company facilities, a window for discussing health issues. In addition, the company is investigating its buildings, equipment and products to ascertain whether they contain any asbestos, and where asbestos has been used, replacements are being made using other materials. Measures are also being strengthened to prevent exposure to asbestos – for example, through improved ventilation – as a means of preventing health impairment from this harmful substance.

Employee Health Management

MHI proactively supports employees in maintaining their physical and mental well-being. Health management departments have been established at each works, and company hospitals are in operation at six locations. Together these facilities provide health check-ups and diagnostic testing, and based on their results guidance is offered to enable employees to keep physically and mentally on top. The company also sponsors various events and provides education to promote sound health and prevent illness or injury. In addition, with the aim of improving the work environment, a set of guidelines has been drawn up for creating comfortable workplaces. In line with these guidelines, initiatives are being taken to maintain and enhance the work environment, work procedures and support systems (locker rooms, washrooms, etc.)

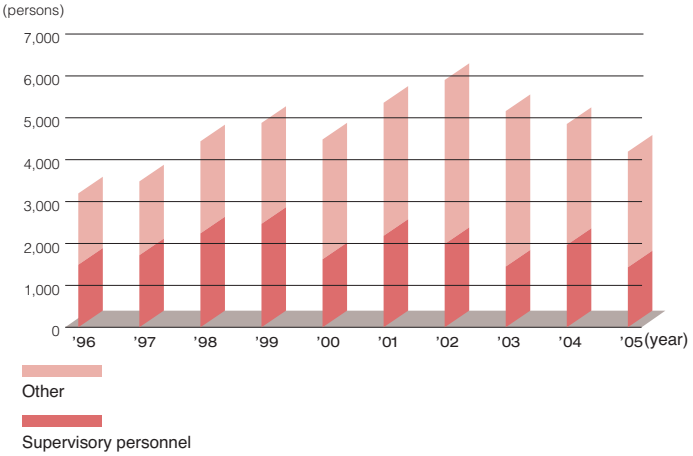
Health consultation

Industrial accident frequency rate



Industrial accident frequency rate: number of deaths or injuries sustained through industrial mishaps, per million hours on the job. Calculated as follows: number of deaths or injuries sustained on the job that require one day or more of leave ÷ (aggregate number of hours worked ×1,000,000)

Participants in mental health guidance courses



Initiatives to Promote Diversity

Expanded Job Opportunities for the Handicapped

MHI has long made significant efforts to expand job opportunities for handicapped individuals through an in-house committee specifically for this purpose. Under a legal reform implemented in April 2004, however, deduction rate granted to businesses hiring handicapped persons were cut by 10%, and as a result the national employment rate of such individuals declined to 1.56% as of June 1, 2004. To rectify this situation, subsequently the company began actively taking steps, both in-house and externally, to promote hiring of the handicapped, and these efforts were rewarded as the rate of employment of the handicapped rebounded to 1.70% as of June 2005. Even more aggressive initiatives in this direction will be taken going forward, in a quest to achieve the statutory employment rate of 1.80%.

Under the slogan "mano a mano" – Spanish for "hand in hand" – MHI actively publicizes its commitment to employment of the handicapped on the company website, in recruitment magazines, etc.

Supporting a Good Balance between Work and Family Life

MHI helps all employees, of both genders, to achieve a proper balance between their work and family life. The company's support system goes well beyond requirements set by law. Among its features are the following: ① a child-rearing leave system which enables employees to take leave until a child reaches the age of 3; ② a child-rearing work system which permits employees to work short hours, flextime, until a child completes the third grade of elementary school; ③ a care-provider system allowing employees to take leave or work flextime for up to one year. Also, to enable a flexible response to employees' needs to tend to a sick child or to provide care, a system has been introduced whereby employees can "bank" holiday time they have earned; the system permits them, under appropriate circumstances, to make use of unused paid holidays from past years which normally would be considered to have "expired."

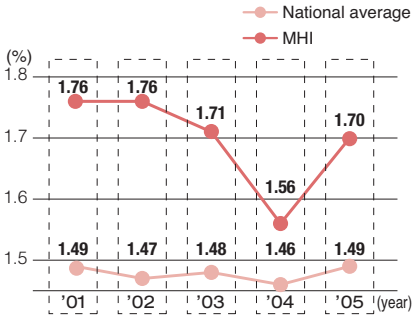
In line with guidelines issued by the Ministry of Health, Labour and Welfare in April 2005, MHI drew up a two-year action plan targeted at promoting the development of an employment environment necessary to seek a proper balance between work and family life. Under the plan, the company is taking steps to boost its record of employees taking child-raising leave. The company will continue in these efforts until it wins certification for having achieved the plan's targets.

Rehiring of Retired Employees

In October 2003 MHI launched a system for rehiring employees after they reach retirement age, and since then it has gradually raised the retirement age from 62 to 65. As a result, many senior employees are actively working throughout the company and at MHI's affiliates as important transmitters of their expertise and skills.

In April 2006, in light of revisions to legislation concerning stabilization of employment for senior citizens, the company revised its rehiring system to embrace, in principle, all employees who wish to avail themselves of the re-employment opportunity. MHI believes that as the number of employees reaching retirement age increases in the years ahead, rehiring them will be an issue of great importance for the MHI Group as a whole, and the new system sets down the parameters for rehiring senior employees throughout the Group. By applying the new system in the years ahead, MHI aims to enable the elderly to make the most of their skills and expertise and continue to work with enthusiasm in their later years.

Handicapped employment rate



Work and family life balance support performance

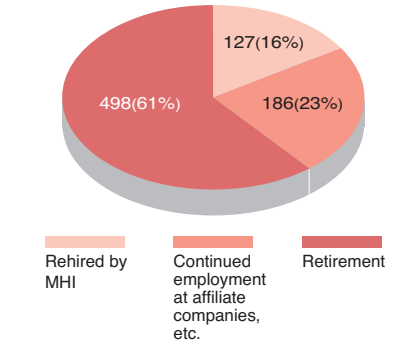
Child-raising leave or flextime work

(Figures for FY2005)	Men	Women
Child-raising leave	1	88
Child-raising flextime	2	62

Care provider leave or flextime work

(Figures for FY2005)	Men	Women
Care provider leave	5	3
Care provider flextime	3	0

Number of employees rehired in FY2005



Social Performance

Commitment to Shareholders and Investors

MHI builds a relationship of trust with its shareholders and investors through active communication, including proactive disclosure of information, and ongoing efforts to increase opportunities for mutually productive dialogue.

Forging a Relationship of Trust with Shareholders and Investors

In a quest to forge a trusting relationship with shareholders and investors, MHI has, in addition to seeking stable earnings of ever higher levels, consistently pursued enhanced provision and disclosure of information through meetings of various kinds, publications, the company's website, etc. The company today is also pursuing interactive communication with its institutional investors through regular meetings between them and top representatives of MHI management.

Among the initiatives undertaken in fiscal 2005 targeted at further strengthening this relationship of trust, the company began making quarterly disclosures of ordinary and net income figures and other information describing MHI's financial and earnings position. In addition, as a follow-up to fiscal 2004, plant tours for shareholders were again conducted during fiscal 2005, this time at the Nagoya Aerospace Systems Works and the Kobe Shipyard & Machinery Works.

Plant Tours for Shareholders

In March 2005 the company held its first ever plant tour for shareholders; the tour, held at the Yokohama Dockyard & Machinery Works, was very well received. MHI, convinced that engaging in activities of this kind on a continuing basis will deepen shareholders' understanding of the company, held two more plant tours during fiscal 2005: one of the Nagoya Aerospace Systems Works in August 2005, and the other of the Kobe Shipyard & Machinery Works in March 2006. In both instances, roughly 1,000 shareholders applied to take part, thereby bringing home once again the depth of the shareholders' interest in the company. Ultimately, 80 shareholders were selected by lottery to participate, each with a companion of their choosing.

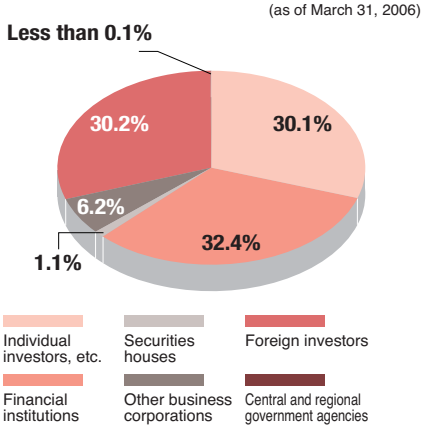
The Nagoya Aerospace Systems Works is where MHI manufactures the F-2 support fighter for the Japan Defense Agency, components for civilian aircraft including the Boeing 777, and space systems including the H-IIA launch vehicle. The Kobe Shipyard & Machinery Works is dedicated to production of large-scale container ships and other seagoing vessels, power systems such as nuclear power plants and diesel engines, highway toll collection systems, and the "wakamaru" robot for home use. During the tours, explanations about the various products were presented by factory personnel using panel displays. By seeing MHI's products and technologies first-hand, shareholders acquired a deeper understanding of the company's business activities.

After the tours, shareholders were asked to complete a questionnaire. One shareholder wrote that the tour had enabled him to make new discoveries, by giving him the opportunity to see at close hand things that he had formerly seen only on the news. Another shareholder remarked how much his child, who accompanied him on the tour, had enjoyed the visit. Yet another shareholder expressed the wish to visit other plants.

MHI will take these and the many other valuable opinions and requests heard from shareholders as references for planning subsequent plant tours and their schedules. In this way, the company aims to continue strengthening its relationship of trust with its shareholders all the more. The company is also planning to hold informal social events and business explanation meetings as a way of achieving ever more dialogue with shareholders.

Shareholder breakdown

(as of March 31, 2006)



Recent dividend disbursements

Disbursement schedule	Dividend per share
Interim Dividend FY 2002	3yen
Profit Dividend FY 2002	3yen
Interim Dividend FY 2003	3yen
Profit Dividend FY 2003	3yen
Interim Dividend FY 2004	0yen
Profit Dividend FY 2004	4yen
Interim Dividend FY 2005	0yen
Profit Dividend FY 2005	4yen

Plant tour by shareholders

Social Performance

Commitment to Suppliers

MHI looks on its suppliers as highly important business partners in its dual quests to elevate customer satisfaction and contribute to society. In keeping with that conviction, the company consistently strives to forge solid, long-term relationships of trust with its suppliers.

Procurement Stance

MHI's suppliers are important business partners who share the company's desire for mutual prosperity through partnership. As such, MHI believes that the company and its suppliers stand on equal footing, and it is in their mutual interests to forge and maintain a relationship of mutual trust. To clarify this position, the company has drawn up a basic policy on procurement, posted on the MHI website.

In particular, in carrying out procurement activities MHI strictly refrains from using its bargaining position inappropriately and complies fully with all laws against unfair trade practices, legislation to prevent delayed payments to subcontractors, and construction business laws. Also, MHI wholeheartedly recognizes that entertainment of the company's procurement personnel by suppliers has the potential to adversely affect a fair and open business relationship, and therefore all employees make every effort to make a clear distinction between their private and professional positions and to respond with full discretion in the performance of their business activities.

MHI's procurement policy spelled out on the company website
URL http://www.mhi-ir.jp/info/material_e.html

Initiatives in Procurement Activities

Under company regulations, in principle sections placing orders make decisions regarding choice of supplier and setting of business terms and conditions. In choosing a supplier, decisions are rendered based on a comprehensive assessment of each candidate's strength in technology development, supply capability, and reliability and stability in terms of product quality, price and delivery schedule. In addition, the company implements a clear separation of the section that is to use the item procured, the section that places the order, and the section that takes delivery, with all three sections checking on the other as a way of preventing spurious orders and other unfair transactions. Within the individual sections themselves, a system is in place whereby multiple employees check the appropriateness of the order content and procured items, to prevent any wrongdoing or impropriety.

In order to elevate the awareness and knowledge of employees engaged in procurement activities, the company also provides education in compliance matters, undertakes e-learning apropos of legislation for preventing delays in the payment of subcontracting charges, and discloses to all employees information relating to temp staff contracts. (See page 33.)

In the case of domestic suppliers, the company undertakes various support activities to raise awareness and knowledge levels. For example, letters are dispatched requesting suppliers' cooperation in MHI's diverse initiatives regarding compliance promotion, and lectures are conducted about relevant laws. In conjunction with prevention of unauthorized divulgence of personal data and other confidential information, in instances when the company provides its suppliers with important confidential information on either MHI or MHI's customers for business purposes, the company demands that suppliers ensure that such information is properly managed and never leaked. In particular, since the full-scale implementation in 2005 of domestic legislation requiring protection of personal information, the company has inaugurated activities for signing agreements with all its suppliers on protection of personal data. Activities have also gotten under way to include in such agreements a clause specifying that no asbestos will be used in any product.

In the case of overseas suppliers, forums are regularly held to provide MHI and companies with which it has close relationships a venue for exchanging views and information. Every effort is made to reflect beneficial proposals from suppliers into improvements in the company's business practices.

Promotion of CSR Awareness and Activities

Doing business with excellent suppliers on a long-term stable basis not only ensures stable acquisition of raw materials and components, but also serves to boost the trustworthiness of MHI and the reliability of its products, which in turn leads to the enhancement of the company's corporate value. Toward that end, MHI believes that it is necessary to expand business with suppliers that excel with respect to reliability and stability, and to support major suppliers both technologically and structurally so that they may become excellent companies.

MHI is also highly cognizant that it is vital to promote CSR at its suppliers, just as in-house, in order to achieve mutual business prosperity. The company strongly believes that going forward it will be increasingly important for suppliers, in addition to technological strengths, to pursue their own CSR activities from the vantage points of the environment and human rights. Although to date no specific initiatives are being made in that direction, MHI intends to consider methods and a time line in the near future.

Social Performance

Contributions to Society

In the spirit of its corporate creed, MHI undertakes a host of activities designed to make contributions to society befitting the relationship of trust that exists between the company and its local communities. As a company whose business operations circle the globe, MHI is committed to pursuing more activities of social benefit in the future as well.

MHI's Stance toward Social Contribution

Contributing to Social Progress through Business Activities

MHI's underlying philosophy is spelled out in the company's creed: "We strongly believe that the customer comes first and that we are obligated to be an innovative partner to society." Going forward, MHII pledges to apply its comprehensive technological capabilities and human resources to make ongoing social contributions, through the provision of superior, safe products and services, befitting a world-class enterprise.

Importance Placed on Relationships of Trust with Local Communities

Through the years, MHI has consistently undertaken a wealth of unique activities at its nationwide branch offices and manufacturing works tailored to contribute to the specific needs of each local community. MHI believes that strengthening its relationships of trust with local communities will lead to fortification of the company's operating base, and with that conviction in mind, going forward the company will continue to pursue socially beneficial activities that place importance on further building ties of trust.

Expenditure on Social Contribution

MHI endorses the aims of the "One Percent Club," a program initiated by the Keidanren (Japan Federation of Economic Organizations) in which participating members pledge to use at least 1% of their ordinary profit or disposable income to activities of benefit to the public. MHI has been a member since the Club's founding in 1990, and the company reports its expenditures for such purposes every year.

Expenditure on socially beneficial activities

(Unit: million yen)

Year	2002	2003	2004
Academic research	278	269	276
Education	476	490	468
Community activities	133	120	72
Sports	123	118	51
Other	244	239	320
Total	1,254	1,236	1,187
Percentage of ordinary profit	1.92%	16.37%	—

Notes:
- Figures include cash donations, payments in kind, activities by employees, free use of company facilities, etc., converted to monetary equivalents; activities performed by employees privately are not included.
- No percentage is provided for 2004 because ordinary income ended with a loss.
- Figures for 2005 are in preparation.

TOPICS Mitsubishi Minatomirai Industrial Museum Welcomes 1 Millionth Visitor

The Mitsubishi Minatomirai Industrial Museum is one of MHI's most important facilities serving as a point of contact between the company and the public. The museum was founded in June 1994 in the hope that it would become a place where young people who are to shoulder the future might aspire to great dreams through first-hand contact with science and technology. In all, there are six display zones respectively dedicated to the environment, outer space, the oceans, transportation, energy and "technologies all around us." Products and technologies that support our lives are introduced in easy-to-understand formats using actual exhibits, scale models, panel displays, video presentations, in-house events, etc.

In November 2005 the museum welcomed its one-millionth visitor to date, celebrated with a commemorative ceremony. The past year also saw the renewal of the Ocean Zone and the creation of a new Transportation Zone introducing transportation systems friendly to the environment. Also added this year is a 3D Theater, where visitors wear special 3D glasses enabling them to become familiar with science and technology while experiencing the thrilling realism enabled by 3D video presentations.

Roughly 60 percent of the museum's visitors are students of up to high school age, and about half of them visit the museum on school excursions. In the coming years, MHI will further enhance exchanges of this kind with the local community by providing children an entertaining venue for coming to know how much fun science and technology can be.

Mitsubishi Minatomirai Industrial Museum
Mitsubishi Juko Yokohama Bldg.,
3-1, Minatomirai 3-chome, Nishi-ku,
Yokohama 220-8401
http://www.mhi.co.jp/e_museum/index.html

One-millionth visitor


Elementary schoolers visiting the remodeled Ocean Zone


Zone introducing eco-friendly transportation systems

Representative Social Activities Initiated at MHI's Head Office and Works

Baseball Tournament for Children in Protection Centers

Nagasaki Shipyard & Machinery Works

The Nagasaki Shipyard & Machinery Works sponsors the "Diamond Cup," a baseball tournament for children living in local child protection centers. Employees formerly on the works' baseball team aid in the role of umpires, etc. Games are held at a local baseball stadium run by Nagasaki Prefecture.

MHI Charity Concerts

Takasago Machinery Works

As a way of contributing to local society, since 2003 the Takasago Machinery Works has held a charity concert featuring well-known musicians. Profits from the concerts are donated in full to Takasago City, for use in welfare and cultural pursuits.

Health Support Consultation

Kobe Shipyard & Machinery Works

Twice each year the Kobe Shipyard & Machinery Works holds health consultation meetings for local residents. The fourth session focused on what food to eat to avoid catching colds, and it included a lecture, blood pressure, urine and body fat testing, and consultation on how to maintain a healthy everyday life.

Free Access to Nagoya Aerospace Systems Works Museum

Nagoya Aerospace Systems Works

A museum located at the Nagoya Aerospace Systems Works is open free-of-charge to the public. On display are materials relating to MHI's aircraft design technologies, materials pertaining to aircraft of every era, and reconstructions of two early aircraft: the Zero fighter and the Shusui rocket-powered interceptor.

Open Launching Ceremonies

Nagasaki, Kobe and Shimonoseki Shipyards & Machinery Works

Ship-launching ceremonies at all MHI shipyards are open to the public. A ship's launching is like a human birth, and employees get great joy from being able to share with others the thrill that comes from watching a large ship slip into the sea for the very first time.

Donation of Tickets to Professional Baseball Games

Hokkaido Office

As a joint activity, the various Mitsubishi Group companies in Sapporo collectively donated 200 season tickets to games played by the local Nippon Ham Fighters professional baseball team at the Sapporo Dome. The donation was made to the Sapporo Social Welfare Council, and the tickets were distributed to children living in the city's child protection centers or in fatherless families.

Voluntary Participation in Area Cleanup Project

Yokohama Dockyard & Machinery Works

As part of its contribution to society through volunteer work, employees of the Yokohama Dockyard & Machinery Works take part in a local project to clean up the Kawai green belt. They do so in cooperation with the Yokohama Satoyama Institute, a local NPO. These activities have won an award from a local welfare organization.

Training of Private Instructors

Head Office and General Machinery & Special Vehicle Headquarters

MHI's Head Office and General Machinery & Special Vehicle Headquarters collaborate in providing training to instructors at private enterprises in Kanagawa Prefecture. Through exchanges of opinion with on-site supervisors, first-hand training, etc., they learn about chain-of-command systems, methods for instructing subordinates, etc. to serve as a reference in their own educational activities.

Donations of Killifish and Crayfish

Hiroshima Machinery Works

Every year the Hiroshima Machinery Works donates killifish and crayfish that live in its drainage ditches for use at nearby kindergartens and elementary schools for educational purposes. It also opens the locations where they thrive to the public for observation and help in raising these creatures now rarely seen.

Matching Gift Program

Head Office and Branch Offices

Money collected by employees was matched by the company and donated, along with shape-memory spoons and forks – utensils for use by those who require special care, to 39 welfare facilities in the Kanto region.

Recovery Assistance to Areas Hit by Natural Disasters

MHI has long embraced a humanitarian perspective and offered its assistance and support to areas worldwide that have suffered natural disasters of large scale. The company proactively helps such regions in their quest toward early recovery.

Major Relief Support Activities in Recent Years

(unit: million yen)

Year	Disaster	Scale of suppor	Type of support
2005	Northern Pakistan Earthquake	500	Cash donation
	Hurricane in southern U.S.	3,000	Donation of light towers and cash
	Typhoon in China's Liaoning Province	44	Cash donation
2004	Sumatra earthquake and tsunami	2,778	Cash donation
	Niigata Chuetsu Earthquake	1,000	Cash donation
	Torrential rains in Niigata Prefecture	100	Cash donation
	Torrential rains in Fukui Prefecture	100	Cash donation
	Southeastern Iran Earthquake	800	Donation of gasoline generators and cash
2003	Northern Algeria Earthquake	42	Cash donation
	SARS epidemic in Taiwan	48	Cash donation

TOPICS Support in the Aftermath of Hurricane Katrina

In August 2005 Hurricane Katrina, a storm on a scale rarely experienced – with maximum winds of 78 meters per second and a gale force reaching 902 mb – pummeled the southern coast of the United States, resulting in some 1,200 casualties and approximately $50 billion in damage (according to a Standard & Poor's estimate). New Orleans, site of an MHI office, was dealt a particularly devastating blow, with roughly 80% of the city inundated.

MHI has numerous bases in the U.S., starting with Mitsubishi Heavy Industries America, Inc. (MHIA), and from a humanitarian perspective – as a member of both the American and global communities – it was quickly decided to make donations to aid the hurricane's victims. MHI provided a cash donation of ¥10 million, MHIA donated 15 light towers and generators (worth ¥10 million), and other affiliates collectively gave relief support equivalent to ¥10 million.

Subsequent reports described how the light towers and generators donated by MHIA contributed to saving lives through their use at medical facilities that lost regular power supplies as a result of the storm.

MHI is pleased to know that its donations proved useful in aiding the victims of Katrina, and the company pledges to continue making contributions to the international community in times of need.

Light towers and generators donated by MHIA

Representative Social Contributions Overseas

Endowment of Chair at Hanoi University of Technology

Since 1998, MHI has endowed a chair at Hanoi University of Technology in Vietnam under UNESCO's UNISPAR (University-Industry-Science Partnership) Programme. The Programme's mission is for the advanced industrialized nations to provide financial and technological support to foster industrial and scientific development in the developing countries.

Donation to The British Museum (MHIE)

Starting in October 2005 Mitsubishi Heavy Industries Europe, Ltd. (MHIE), MHI's main operating base in Europe, launched a three-year commitment to fund part of the operating costs of the Japanese Section at The British Museum. In doing so, MHIE is contributing as a bridge between Europe and Japanese culture.

Gathering at Hanoi University of Technology in Vietnam

The British Museum

Social Performance

Communication with Society

Through its business activities, MHI engages with diverse local communities worldwide. The company takes a proactive approach to forge strong relationships of trust with those communities.

Nuclear Power PA Activities

To promote greater public acceptance of nuclear power generation, MHI welcomes visitors to tour its Kobe Shipyard & Machinery Works, the company's main manufacturing plant for nuclear power equipment. Here, visitors are offered explanations and presentations on the necessity and safety of nuclear power generation. In 2005 approximately 3,000 visitors took advantage of this opportunity, and in the past 10 years a total of roughly 40,000 visitors have participated.

During these tours, visitors initially are informed about the current state of nuclear power generation, including information on the energy situation and environmental issues both in Japan and worldwide, as well as about MHI's approach to nuclear energy. Next, they are shown around the plant itself, where colossal structures weighing millions of tons are manufactured using some of the world's largest multi-purpose machine tools.

The tours enable visitors to view this equipment in a way not possible at power plants in actual operation. Many visitors comment on the overwhelming scale of the equipment, and large numbers complete the tour with an unprecedented appreciation of the state-of-the-art nuclear power technology that supports the nation's energy needs.

Plant tour at Kobe Shipyard & Machinery Works

Awards Received from Outside the Company

Award Name	Sponsor	Reason for Commendation (Product, Activity, Business Location, etc.)	Date Received
The 54th Electrical Machinery Industry Technology Award (Development Prize)	The Japan Electrical Manufacturers' Association (JEMA)	Development of waste tire-fired bubbling fluidized bed boiler	April 2005
The 54th Electrical Machinery Industry Technology Award (Encouragement Prize)	The Japan Electrical Manufacturers' Association (JEMA)	Development of LX series of multi-air-conditioners for building installations	April 2005
The 43rd SHASE Award of Technology	The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan (SHASE)	Development of "variable over water volume system" for turbo chillers	May 2005
Award for Contributions to Collaboration between Industry, Academia and Government (Minister of Internal Affairs and Communications Prize)	Ministry of Internal Affairs and Communications (MIC), etc.	Mixed water/air fire extinguishing system	June 2005
Technology Awards	Japan Society of Refrigerating and Air Conditioning Engineers (JSRAE)	Air-conditioning and refrigeration systems	October 2005
Kanto Region Invention Award (Invention Encouragement Prize)	Japan Institute of Invention and Innovation (JIII)	Uniform film-formation technology for large-area Si thin film used in solar fuel cells	October 2005
Central Japan Invention Award (Invention Encouragement Prize)	Japan Institute of Invention and Innovation (JIII)	Automatic address setting technology for air-conditioning control networks	October 2005
Kinki Region Invention Award (Branch Manager Prize)	Japan Institute of Invention and Innovation (JIII)	High-efficiency turbo chillers	October 2005
Kyushu Region Invention Award (Invention Encouragement Prize)	Japan Institute of Invention and Innovation (JIII)	Wind turbine blade structure	November 2005
Technology Prize of The Japanese Society of Printing Science and Technology	The Japanese Society of Printing Science and Technology (JSPST)	Development of newspaper inline quality control system	February 2006

Progress Toward a Sustainable Society

MHI's Activities (Society/Environment)	YH	Major Events in Japan and Abroad (Society/Environment)	
		Japan	World
		1967 Institution of Basic Law for Environmental Pollution Control.	1948 Universal Declaration of Human Rights.
1970 Completion of Japan's first PWR power plant. 1973 Inauguration of Environment Management Department. 1977 Development of "Basic Guidelines for Safety & Health Management." 1978 Creation of Environmental Manager Conferences.	1970	1971 Establishment of Environment Agency.	1972 "United Nations Conference on the Human Environment" convenes in Stockholm. Adoption of "Statement for Human Environmental Quality." Establishment of "United Nations Environment Programme (UNEP)."
1980 Establishment of Committee on Promotion of Training in the Dowa Issue.	1980		1976 "OECD Guidelines for Multinational Enterprises" issued. 1981 "Convention on the Elimination of All Forms of Discrimination against Women" takes effect. International Year of Disabled Persons.
1987 Establishment of Export-related Regulations Monitoring Committee.		1985 Enactment of Equal Employment Opportunity Law. 1988 Enactment of Ozone Layer Protection Law.	1987 Adoption of Montreal Protocol on Substances that Deplete the Ozone Layer.
1989 Launch of In-house Conference on CO_2 Measures and In-house Conference on CFC Measures.	1990	1991 Establishment of "Keidanren Global Environmental Charter" and "Keidanren Charter of Corporate Behavior." Enactment of Child Care Leave Law.	1990 Institution of "Americans with Disabilities Act."
1992 Committee on Promotion of Training in the Dowa Issue renamed Committee for Raising Awareness of Human Rights. Establishment of Committee for the Promotion of Employment of Disabled People. 1993 Formulation of voluntary plan titled "Our Approach to Environmental Problems."		1992 Ministry of International Trade and Industry requests "Voluntary Plan on the Environment." 1993 Enactment of Basic Environmental Law.	1992 "United Nations Conference on Environment and Development" (Earth Summit) convenes in Rio de Janeiro; adoption of "Rio Declaration on Environment and Development" and Agenda 21. 1994 Caux Round Table draws up "Principles for Business."
1996 Formation of "Environmental Policies" and establishment of Environment Committee. 1997 Acquisition by Yokohama Dockyard & Machinery Works of ISO14001 accreditation, a first among Japan's heavy industrial manufacturers. Launch of R410A-compatible air-conditioners. (R410A: new type of environmentally friendly refrigerant) 1998 Development of system that thermally decomposes PCBs contained in industrial effluents. 1999 Delivery of combined-cycle power plant incorporating the M701G gas turbine, featuring the world's highest efficiency rating.		1995 Child Care Leave Law is revamped into Child Care and Family Care Leave Law. 1996 Revision of "Keidanren Charter of Corporate Behavior." 1997 Formulation of "Keidanren Voluntary Action Plan on the Environment." 1998 Enactment of Law Concerning the Promotion of Measures to Cope with Global Warming and Law to Promote Specified Nonprofit Activities. 1999 Enactment of Pollutant Release and Transfer Register (PRTR) Law.	1995 "1st Conference of the Parties to the United Nations Convention on Climate Change" (COP1) convenes in Berlin. 1996 ISO14001 is instituted. "2nd Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP2) convenes in Geneva. 1997 "3rd Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP3) convenes in Kyoto. 1998 "4th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP4) convenes in Buenos Aires. 1999 "5th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP5) convenes in Bonn.
2000 ISO14001 certification completed by all production bases (13 works).	2000	2000 Enactment of The Basic Law for Establishing a Recycling-based Society. Revision to Law for the Promotion of Recycled Resources Utilization. Enactment of Construction Material Recycling Law, Food Recycling Law and Law on Promoting Green Purchasing.	2000 6th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP6) convenes in The Hague. "United Nations Global Compact" is instituted. Issuance of "GRI Guidelines Version 1."
2001 Engineering Department acquires ISO14001 certification. Establishment of Compliance Committee.		2001 Establishment of Ministry of the Environment. Enactment of Law Concerning Special Measures against PCB Waste and Fluorocarbons Recovery and Destruction Law.	2001 "7th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP7) convenes in Marrakech. ISO Council launches feasibility study on establishing international CSR standards.
2002 Establishment of medium- to long-term environmental activity goals.		2002 Ratification of Kyoto Protocol. Enactment of Soil Contamination Countermeasures Law. Revision of Law Regarding the Rationalization of Energy Use. Keidanren revamps "Keidanren Charter of Corporate Behavior" into "Corporate Behavior Charter." Ministry of Economy, Trade and Industry holds first meeting of CSR Standardization Committee.	2002 "World Summit for Sustainable Development" convenes in Johannesburg. "8th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP8) convenes in New Delhi. Release of "GRI Guidelines Version 2."
2003 Establishment of Construction Business Act Compliance Committee. 2004 Joins United Nations Global Compact initiative.		2003 Ministry of the Environment implements trial project for trading of greenhouse gas emissions. Emissions standards for diesel vehicles tightened. Revision of Waste Management and Public Cleansing Law. Japan Committee for Economic Development releases 15th Corporate White Paper, entitled "Evolution of Market and Social Responsibility-Minded Business Management."	2003 First study meeting is held to discuss treaty on safety of radioactive waste management. "9th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP9) convenes in Milan. 2004 Tenth item (on corruption prevention) added to United Nations Global Compact. "10th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP10)" convenes in Buenos Aires.
2005 Establishment of Managing Board for Innovation in Nuclear Business. Introduction of Executive Officer system. Establishment of Internal Audit Department. Establishment of CSR Promotion Department. 2006 Acquisition of ISO14001 certification by Head Office (including branch offices).		2005 Enactment of Act for Protection of Computer Processed Personal Data held by Administrative Organs. 2006 Enactment of New Company Law.	2005 Kyoto Protocol goes into force. "11th Conference of the Parties to the United Nations Framework Convention on Climate Change" (COP11) and the "1st Meeting of the Parties to the Kyoto Protocol" (COP/MOP1) convene in Montreal.

Third-Party Opinions

Professor, International School of Economics and Business Administration, Reitaku University

Iwao Taka

MHI undertakes numerous initiatives that merit commendation, but among them I would like to express my high esteem for the following two in particular.

First is the company's active disclosure of information that has negative overtones. The accident in which HCFCs were released into the atmosphere and its confirmation that soil and groundwater contamination had taken place at seven sites were reported without obfuscation.

Second is the way MHI identifies a problem and then develops a more rational approach to it. Indeed, one reason the company discloses negative information is because it is making progress in rational, comprehensive risk control.

With the aspiration that MHI might become a model company for others to emulate, I would like to suggest the following three topics for the company to address. (1) MHI sets specific target dates and actively addresses economic and environmental matters, yet it makes no clear indications with respect to social issues. (2) As an outgrowth of the bid-rigging scandal, measures have been strengthened to ensure fairness in order placements, but I continue to embrace doubts as to how well these functions are working. I would like to see MHI reinforce its position that in the event that an employee discovers behavior that infringes against restrictions on unfair business transactions, the employee will be under mandatory obligation to report said infringement to the in-house organization that deals with such matters. (3) MHI says that systematic fulfillment of CSR procurement has not yet begun, but what I would like to see is information pertaining at least to individual problems. Readers have a keen interest, for example, in knowing what measures were taken against the hotel chain where discrimination against the people with disabilities had become the norm.

In listing these three topics, fundamentally what I hope is for MHI to take cognizance of its tremendous impact on society as a whole and then to apply that knowledge to the construction of a sustainable community. MHI says that from July 2006, in conjunction with the global warming issue the company will start demonstration testing of CO_2 recovery systems. Given the scale of its influence, I hope that MHI will demonstrate more aggressive leadership not only with respect to economic and environmental matters but also social issues as well.

Professor, College of Policy Science, Ritsumeikan University
Professor, Institute of Economic Research, Kyoto University

Takamitsu Sawa

The 21st century is often spoken of as "the century of the environment." There are two meanings to this: (1) that the 21st century is a century in which global environmental problems will become increasingly severe; (2) that in the 21st century environmental constraints will serve as a springboard to economic development and technological innovation. In reading through this report, I came away with the strong impression that MHI is taking the lead in addressing the demands of this new century of the environment.

First, MHI thoroughly considers environmental ramifications in its production and management processes. Second, MHI became involved in the development of CO_2 recovery and fixation technologies as early as in 1992. Third, the company has played a leading role in enhancing the efficiency of technologies making use of renewable energies such as solar energy and wind power, improving the combustion efficiency of thermal power generating plants, and developing next-generation nuclear power plants. I have the deepest respect for MHI's aggressive stance, ahead of other companies, in developing the technologies that are indispensable for preventing global warming.

In the 20th century, companies that achieved growth bathed in the public limelight. In the 21st century, consumers in today's mature society are focusing their attention on how companies fulfill their corporate social responsibility (CSR). Corporate business partners are also closely monitoring the initiatives being taken. In other words, the criteria for determining what makes a company attractive have shifted to the way it addresses CSR and its contribution to sustainable development. From this report, one can readily see how MHI is sensitively attuned to changes within the context of these times.

In the final quarter of the 20th century, the coordinates of progress in science and technology underwent a substantial shift. Where earlier progress equated to being faster, stronger and bigger – as illustrated by jumbo jets and the Concorde – now progress is measured against the yardstick of being more fuel-efficient, more cost-effective and safer. MHI's CI statement – its commitment to forging a solid future for this planet through "Dramatic Technologies" – accurately reflects that shift, and it deserves the highest praise.

We Value Your Comments

For this year's report, we called on Professors Iwao Taka and Takamitsu Sawa, experts in the areas of compliance and energy, to offer MHI their views as third parties.

Mr. Taka commended MHI on its disclosure of negative information. These sentiments of Mr. Taka, who is well versed in corporate ethics and is an opinion leader in this field, will serve as a great source of inspiration for us. Concerning the three issues he raised – setting down clear social targets, strengthening our stance on fair bidding, and CSR procurement – we will immediately bring these points up with the relevant in-house sections.

Mr. Sawa, who is well versed in environmental ethics focused on environmental management, offered his opinion concerning MHI's stance toward the environment and development of technologies to prevent global warming.

Encouraged by the words offered by these two experts, we will continue to be keen to these changing times and pledge to devote our technological capabilities through our business activities to the betterment of society.

Environmental Committee Chairman,
Executive Vice President

Hideo Egawa

GRI Guidelines and Global Compact Comparison Chart

In preparing this report, we referred to the GRI Guidelines (2002)*. Since 2004, MHI has also participated in the United Nations Global Compact initiative. The table below shows the content of the GRI Guidelines, the principles of the UN Global Compact and the relevant pages in this report.

GRI Guidelines		Corresponding Global Compact Principle	Relevant page(s) in this report
1. Vision and Strategy			
1.1	Statement of the organisation's vision and strategy regarding its contribution to sustainable development	Principle 8	3-6
2. Profile			
Organisational Profile			
2.1	Name of reporting organisation		2
2.2	Major products and/or services, including brands if appropriate		2, 20-24
2.3	Operational structure of the organisation		2
2.4	Description of major divisions, operating companies, subsidiaries and joint ventures		2
2.5	Countries in which the organisation's operations are located		1-2
2.6	Nature of ownership; legal form		2
2.8	Scale of the reporting organisation		2
2.9	List of stakeholders, key attributes of each, and relationship to the reporting organisation		47-48
Report Scope			
2.10	Contact person(s) for the report, including e-mail and web addresses		Bach cover
2.11	Reporting period (e.g. fiscal/calendar year) for information provided		1
2.12	Date of most recent previous report (if any)		1
2.13	Boundaries of report (countries/regions, products/services, divisions/facilities/joint ventures/subsidiaries) and any specific limitations on the scope		1
2.14	Significant changes in size, structure, ownership, or products/services that have occurred since the previous report		20
Report Profile			
2.18	Criteria, definitions used in any accounting for economic, environmental, and social costs and benefits		40
2.19	Significant changes from previous years in the measurement methods applied to key economic, environmental, and social information		54
2.20	Policies and internal practices to enhance and provide assurance about the accuracy, completeness, and reliability that can be placed on the sustainability report		1
2.22	Means by which report users can obtain additional information and reports about economic, environmental, and social aspects of the organisation's activities, including facility-specific information (if available)		33 43, 50, 56
3. Governance Structure and Management Systems			
Structure and Governance			
3.1	Governance structure of the organisation, including major committees under the board of directors that are responsible for setting strategy and for oversight of the organisation		27
3.2	Percentage of the board of directors that are independent, non-executive directors		27
3.4	Board-level processes for overseeing the organisation's identification and management of economic, environmental, and social risks and opportunities		29, 31, 37, 50
3.6	Organisational structure and key individuals responsible for oversight, implementation, and audit of economic, environmental, social, and related policies		29, 31, 37, 50
3.7	Mission and values statements, internally developed codes of conduct or principles, and policies relevant to economic, environmental, and social performance and the status of implementation.		8,33,53,,56
Stakeholder Engagement			
3.9	Basis for identification and selection of major stakeholders		47--48
3.10	Approaches to stakeholder consultation reported in terms of frequency of consultations by type and by stakeholder group		9-13, 32, 51-52, 55,60,62
3.11	Type of information generated by stakeholder consultations		9-13, 32
3.12	Use of information resulting from stakeholder engagements		1, 9
Overarching Policies and Management Systems		Principle 7	4-5, 16
3.13	Explanation of whether and how the precautionary approach or principle is addressed by the organisation		7
3.14	Externally developed, voluntary economic, environmental, and social charters, sets of principles, or other initiatives to which the organisation subscribes or which it endorses		45, 50, 56
3.16	Policies and/or systems for managing upstream and downstream impacts		45-46
3.17	Reporting organisation's approach to managing indirect economic, environmental, and social impacts resulting from its activities		25-60
3.19	Programmes and procedures pertaining to economic, environmental, and social performance		38
3.20	Status of certification pertaining to economic, environmental, and social management systems		

*Global Reporting Initiative - Sustainability Reporting Guidelines
These are guidelines created as a joint project between the American non-profit organization Ceres and the UN Environment Programme (UNEP) to serve as a framework when developing sustainability reports.

GRI Guidelines		Corresponding Global Compact Principle	Relevant page(s) in this report
4 GRI Content Index			
4.1	A table identifying location of each element of the GRI Report Content, by section and indicator		63-64
5 Performance Indicators			
Integrated Indicators			
Systemic Indicators	Systemic indicators relate the activity of an organization to the larger economic, environmental, and social systems of which it is a part.		53
Economic Performance Indicators			
EC1, EC2	Net sales; Geographic breakdown of markets		2
EC6	Distributions to providers of capital broken down by interest on debt and borrowings, and dividends on all classes of shares, with any arrears of preferred dividends to be disclosed		55
EC10	Donations to community, civil society, and other groups broken down in terms of cash and in-kind donations per type of group		57, 59
Environmental Performance Indicators			
EN1, EN3	Total materials use other than water, by type; Direct energy use segmented by primary source	Principle 8	35
EN5, EN22	Total water use; Total recycling and reuse of water	Principle 8	35, 44
EN8	Greenhouse gas emissions	Principle 8	35-36, 41
EN9	Use and emissions of ozone-depleting substances	Principle 8	43
EN10	NOx, SOx, and other significant air emissions by type	Principle 8	35-36
EN11	Total amount of waste by type and destination	Principle 8	44
EN12	Significant discharges to water by type	Principle 8	35
EN13	Significant spills of chemicals, oils, and fuels in terms of total number and total volume	Principle 8	39
EN14	Significant environmental impacts of principal products and services	Principle 8	45
EN17	Initiatives to use renewable energy sources and to increase energy efficiency	Principle 9	41-42
EN31	All production, transport, import, or export of any waste deemed “hazardous” under the terms of the Basel Convention Annex I, II, III, and VIII		43
EN35	Total environmental expenditures by type		40
Social Performance Indicators			
Labour Practices and Decent Work			
LA1	Employment		2
LA4	Labour/Management Relations	Principle 3	52
LA5, LA6, LA7	Health and Safety		52-53
LA10	Diversity and Opportunity	Principle 6	51, 54
LA12	Employee benefits beyond those legally mandated		53
LA16, LA17	Training and Education		31, 33, 37, 51, 54
Human Rights			
HR1	Description of policies, guidelines, corporate structure, and procedures to deal with all aspects of human rights relevant to operations, including monitoring mechanisms and results	Principle 1	8, 29
HR2	Evidence of consideration of human rights impacts as part of investment and procurement decisions, including selection of suppliers/contractors	Principle 1,Principle 2	56
HR4	Non-discrimination	Principle 1,Principle 6	7
HR5	Freedom of Association and Collective Bargaining	Principle 3	7
HR6	Child Labour	Principle 5	7
HR7	Forced and Compulsory Labour	Principle 4	7
HR8	Employee training on policies and practices concerning all aspects of human rights relevant to operations		8, 31
HR9, HR10	Disciplinary Practices		30, 32
Society			
SO2	Bribery and Corruption	Principle 10	7, 8, 30, 33
SO4	Awards received relevant to social, ethical, and environmental performance		60
SO6	Court decisions regarding cases pertaining to anti-trust and monopoly regulations		30
SO7	Description of policy, procedures/management systems, and compliance mechanisms for preventing anti-competitive behaviour		8, 30-31
Product Responsibility			
PR1	Customer Health and Safety		50
PR8	Description of policy, procedures/management systems, and compliance mechanisms related to customer satisfaction, including results of surveys measuring customer satisfaction		49-50

MITSUBISHI HEAVY INDUSTRIES, LTD.

Address all inquiries about this report to:

Mitsubishi Heavy Industries, Ltd.
Corporate Social Responsibility Department

16-5, Konan 2-chome, Minato-ku, Tokyo, Japan
Postal Code: 108-8215
Phone: 81-3-6716-3884 Fax: 81-3-6716-5811
URL: http://www.mhi.co.jp/

Locations

Head Offices

Shinagawa
16-5, Konan 2-chome, Minato-ku, Tokyo
Postal Code: 108-8215
Phone: 81-3-6716-3111 Fax: 81-3-6716-5800

Yokohama
Mitsubishi Juko Yokohama Bldg.
3-3-1, Minatomirai, Nishi-ku, Yokohama
Postal Code: 220-8401
Phone: 81-45-224-9988 Fax: 81-45-224-9901

Divisions

General Machinery & Special Vehicle Headquarters
3000, Tana, Sagamihara, Kanagawa
Postal Code: 229-1193
Phone: 81-42-761-1101 (General Affairs Dept.)
Fax: 81-42-763-0800

Air-Conditioning & Refrigeration Systems Headquarters
3-1, Asahi, Nishi-biwajima-cho, Kiyosu, Aichi
Postal Code: 452-8561
Phone: 81-52-503-9200 (General Affairs Dept.)
Fax: 81-52-503-3533

Paper & Printing Machinery Division
1-1-1, Itozaki-Minami, Mihara, Hiroshima
Postal Code: 729-0393
Phone: 81-848-67-2054 (General Affairs & Labor Section)
Fax: 81-848-63-4463

Machine Tool Division
130, Roku-jizo, Ritto, Shiga
Postal Code: 520-3080
Phone: 81-77-553-3300 (General Affairs Dept.)
Fax: 81-77-552-3745

Works

Nagasaki Shipyard & Machinery Works
1-1, Akunoura-machi, Nagasaki
Postal Code: 850-8610
Phone: 81-95-828-4121 (General Affairs Dept.)
Fax: 81-95-828-4034

Kobe Shipyard & Machinery Works
1-1-1, Wadasaki-cho, Hyogo-ku, Kobe
Postal Code: 652-8585
Phone: 81-78-672-2220 (General Affairs Dept.)
Fax: 81-78-672-2245

Shimonoseki Shipyard & Machinery Works
6-16-1, Hikoshima Enoura-cho, Shimonoseki
Postal Code: 750-8505
Phone: 81-832-66-5978 (General Affairs & Labor Section)
Fax: 81-832-67-7010

Yokohama Dockyard & Machinery Works
12, Nishiki-cho, Naka-ku, Yokohama
Postal Code: 231-8715
Phone: 81-45-629-1201 (General Affairs Dept.)
Fax: 81-45-629-1202

Hiroshima Machinery Works
4-6-22, Kan-on-shin-machi, Nishi-ku, Hiroshima
Postal Code: 733-8553
Phone: 81-82-291-2112 (General Affairs Dept.)
Fax: 81-82-294-0260

Takasago Machinery Works
2-1-1, Arai-cho Shinhama, Takasago
Postal Code: 676-8686
Phone: 81-79-445-6125 (General Affairs Dept.)
Fax: 81-79-445-6900

Nagoya Aerospace Systems Works
10, Oye-cho, Minato-ku, Nagoya
Postal Code: 455-8515
Phone: 81-52-611-2121 (General Affairs Dept.)
Fax: 81-52-611-9360

Nagoya Guidance & Propulsion Systems Works
1200, O-aza Higashi-tanaka, Komaki
Postal Code: 485-8561
Phone: 81-568-79-2113 (General Affairs Dept.)
Fax: 81-568-78-2552

Plant and Transportation Systems Engineering & Construction Center
[Mihara]
1-1-1, Itozaki-Minami, Mihara, Hiroshima
Postal Code: 729-0393
Phone: 81-848-67-2072 (General Affairs & Labor Section)
Fax: 81-848-67-2816
[Yokohama]
Mitsubishi Juko Yokohama Bldg., 3-3-1, Minatomirai, Nishi-ku, Yokohama
Postal Code: 220-8401
Phone: 81-45-224-9288 (General Affairs & Labor Section)
Fax: 81-45-224-9932

Mitsubishi Minatomirai Industrial Museum
Mitsubishi Juko Yokohama Bldg., 3-3-1, Minatomirai, Nishi-ku, Yokohama
Postal Code: 220-8401
Phone: 81-45-224-9031 Fax: 81-45-224-9902

Vegetable INK for waterless printing
Non Volatile Organic Compounds

To protect the environment, this brochure is printed on 100% recycled paper with non-VOC inks (containing no volatile organic compounds), by a waterless printing method that generates no harmful wastewater.