



**IHI**

**IHI**  
**CSR REPORT**  
**2013**

**Realize your dreams**

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### Editorial Policies

The basic purpose of the IHI CSR Report 2013 is to convey to readers how the IHI Group is addressing various social problems through the provision of products and services backed by the monozukuri technology we have cultivated ever since our company was founded. Based on our FY2012 Corporate Message, "Realize your dreams," and our medium-term management plan, "Group Management Policies 2013," this report shows what the IHI Group aims to achieve through its CSR activities. The digest version, presented in booklet form, summarizes the key activities of the past year, while the website adds more detail on CSR activities and provides updated CSR information.

### Scope of Report

IHI Corporation and its main group companies. (The term "IHI" is used for sections and data relating to IHI Corporation. If group companies are included, the term "IHI Group" is used.)

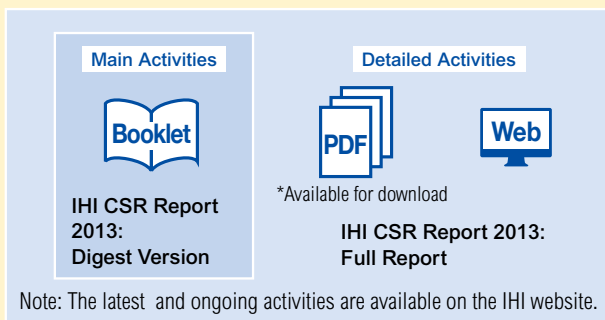
### Period

This report covers FY2012 (April 1, 2012–March 31, 2013) in principle; however, some parts include activities and information from before this period as well as those conducted after this period.

### Publication Date

June 2013  
(The previous CSR Report was published in June 2012, and the next will be published in June 2014)

### Structure of CSR Report



### Reference Guidelines

Environmental Reporting Guidelines (2012 version),  
Ministry of the Environment  
Sustainability Reporting Guidelines version G3.1 (version 3.1), Global Reporting Initiative

CSR Information <http://www.ihi.co.jp/csr/english/index.html>  
Financial Data <http://www.ihi.co.jp/en/ir/finance/index.html>

## Company Profile

### Company Name

IHI Corporation

### Head Office

Address TOYOSU IHI BUILDING., 1-1,  
Toyosu3-chome, Koto-ku, Tokyo 135-8710, Japan

### Year of establishment

December 5, 1853

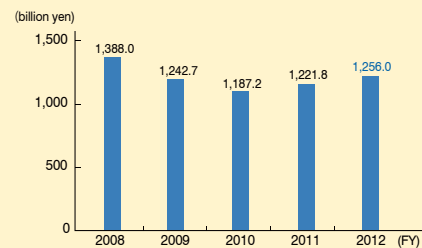
### Capital

95.7billion yen

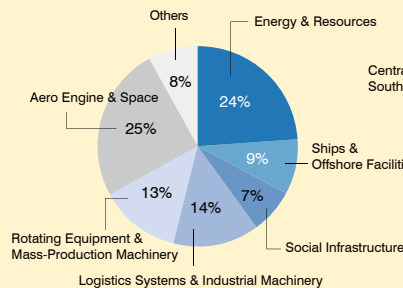
### Number of Group Companies

Consolidated subsidiaries 143

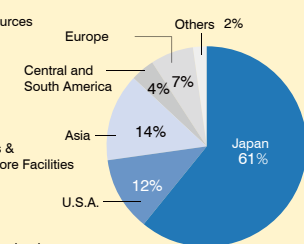
### Consolidated Sales



#### Consolidated sales ratio by reportable segment



#### Consolidated sales ratio by geographical area



## Main Products and Services Belonging to Each Segment

### Energy & Resources

Boilers, components for nuclear power plants, storage facilities, process plants, power systems, power systems for land and marine use, and floating LNG storage facilities

### Ships & Offshore Facilities

Shipbuilding, ship repairs and offshore structures

### Social Infrastructure

Bridges, construction materials and real estate sales and rental

### Logistics Systems & Industrial Machinery

Material handling systems, physical distribution and factory automation systems, parking systems, traffic systems, steel manufacturing equipment, paper production machines and environmental control systems

### Rotating Equipment & Mass-Production Machinery

Compressors and vehicular turbochargers

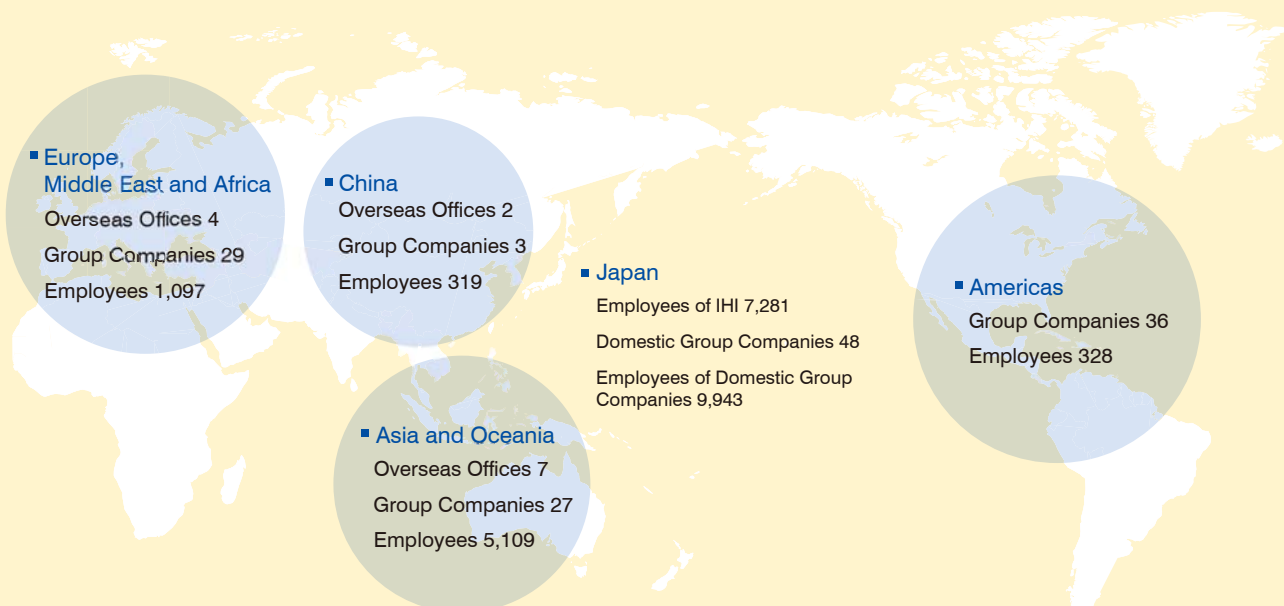
### Aero Engine & Space

Jet engines, space-related equipment and defense machinery

### Others

Diesel engines, agricultural machinery, construction machinery and other services

## Operation Bases and Employees by Geographical area



### IHI Group's Mission Is to Realize Society's Dreams



President and Chief Executive Officer  
**Tamotsu Saito**

In 2013, the IHI Group is celebrating the 160<sup>th</sup> anniversary since its establishment in 1853. I would like to express my deepest gratitude to all as this accomplishment is entirely due to the support we have received from our customers and various other stakeholders.

In this commemorative year, the IHI Group began implementing our new medium-term management plan for the next three years: Group Management Policies 2013.

During the three years of our previous medium-term management plan, the global population surpassed seven billion, and moreover, society continued to change in every part of the world with the advance of economic globalization and technologies such as ICT. Japan suffered the calamity of the Great East Japan Earthquake in 2011, from which the disaster area has not yet recovered. It is under such social conditions that the Group Management Policies 2013 was created, aiming for further growth of the Group.

#### Working to Resolve Social Issues through Business

It is essential that we flourish together with society as its member. We must work to resolve various social issues through business; we have faith in this. Therefore, in preparing Group Management Policies 2013, we began by analyzing changes in our business environment, in other words, megatrends, that is surrounding us in the world today. We reached to the conclusion that what society truly requires is “smart social infrastructure”—infrastructure which upholds safety, security, richness of the Earth and humanity amid today's global population growth, urbanization and industrialization. We concluded that this “smart social infrastructure” is what society strongly desires from the IHI Group, and is the contribution the IHI Group should make to promote sustainable growth of the society.

Given this understanding, Group Management Policies 2013 categorizes the IHI Group's products and services into the four business areas: “Resources, Energy and Environment,” “Social Infrastructure and Offshore Facilities,” “Industrial Systems and General-Purpose Machinery” and “Aero Engines, Space and Defense.” In each of these business areas, we believe it is important to offer optimal solutions to resolve the issues that have arisen from urbanization and industrialization.

## Realizing the Dreams of Society through *Monozukuri*\* Technology

\**Monozukuri* technology means the technology used to improve the competitiveness of products and services offered by strengthening the capabilities required in development, design, supply, manufacturing and construction.

The IHI Group announced our new corporate message—“Realize your dreams”—in October 2012, prior to the release of Group Management Policies 2013. Our corporate message is a CSR vision that clearly states that realizing the dreams of society is the IHI Group's mission and also our promise to customers and other stakeholders. We feel a responsibility to keep this promise.

To those ends, with ceaseless efforts to improve quality and productivity, we will focus on the actual facts on site based on the Three Reality Principle (going to actual places, examining actual products or services, and understanding the reality of the situation which we are in). With this as our foundation, the IHI Group will strive to contribute to the advancement of society through *monozukuri* technology, and become an enterprise group which leads the world by creating value for our customers and society.

I am confident that the recognition of the value by customers and society will bring further growth to the IHI Group.

To ensure such growth, from this fiscal year, we also started a study to set a goal focused on the social aspects of our business.

The entire IHI Group will study how our business activities generate value for society, and management will confirm the progress of those efforts whenever needed.

For the IHI Group to realize the diverse “dreams” of society, we must first understand the expectations of our stakeholders. This year's CSR report presents information on the social issues we recognize and the actions we are taking. If you find any points in the report that concern you, please share your opinions or impressions with our CSR Division, your local IHI Group company office or any IHI Group employee.

June 2013

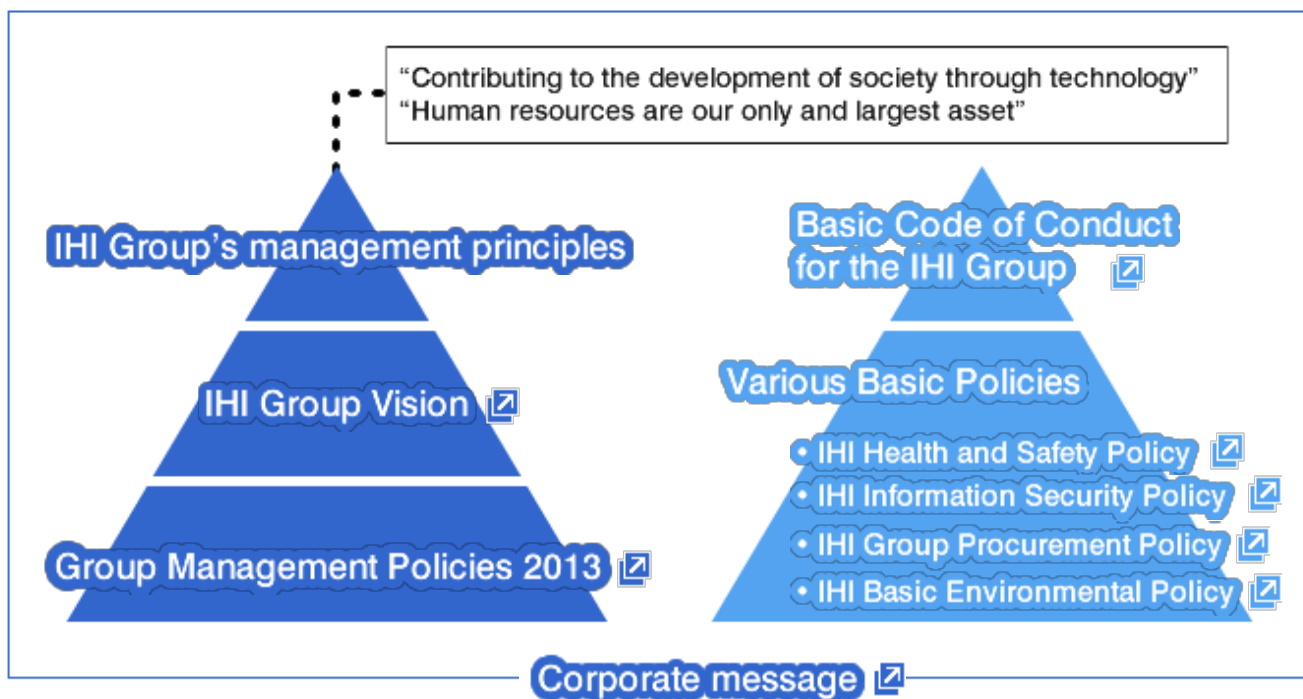
Tamotsu Saito

President and Chief Executive Officer

# IHI Group's principle and basic policy

We at the IHI Group are committed to implementing what is necessary to meet the expectations and gain the trust of not only our customers, business partners, shareholders and colleagues, but also the local and international communities, while keeping an awareness of global issues. By doing so, we aim to enhance our existential value as we move forward into the future.

## Principle and basic policy



## 1. IHI Group Aims

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The IHI Group seeks to solve the various environmental, industrial, social, and energy related problems of the 21st century, through using engineering expertise to focus on "**Monozukuri**" **technology**. In striving toward these goals, IHI is becoming a global enterprise offering the safety and security for the benefit of both the environment and humanity. "Monozukuri" Technology means the technology used to improve the competitiveness of products and services offered, by strengthening the capabilities required in development, design, supply, manufacture and construction.

## 2. IHI Group Business Areas

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- Resources, Energy and Environment
- Social Infrastructure, Offshore Facilities
- Industrial Systems, General-Purpose Machinery
- Aero Engine, Space and Defense

## 3. IHI Group Employees

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- (a) IHI Group employees shall share the vision of contributing to society through engineering, focusing on "Monozukuri" technology.
- (b) IHI Group employees shall share passion, knowledge and skills regardless of each individual business operation the employee belongs to.

## 4. Employees' Aims

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In order to create value for the customer, IHI group employees must aim to work as distinguished professionals, striving to excel as a **global company** in "**Monozukuri**" and **engineering technologies with world-renowned product quality**.

### Basic Code of Conduct for the IHI Group

We at the IHI Group are committed to implementing what is necessary to meet the expectations and gain the trust of not only our customers, business partners, shareholders and colleagues, but also the local and international communities, while keeping an awareness of global issues. By doing so, we aim to enhance our existential value as we move forward into the future and realize our Group's management principles of "Contributing to the development of society through technology" and "Human resources are our only and largest asset."

#### ■ Fundamental and Universal Principles of the Entire IHI Group

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(Respect for the rule of law and ethical conduct)

We strictly observe laws and ordinances based on a clear understanding of their meaning. We also act sincerely and fairly and in accordance with high ethical standards so that we do not violate social rules or international norms.

(Respect for human rights)

We fully recognize the importance of, and always strive to respect, human rights during our business activities.

(Promotion of mutual understanding)

In order to promote mutual understanding with those around us, we strive to disseminate information on our business activities, explain the effects of these activities on the surrounding environment, and engage in an exchange of opinions with our broader communities on a daily basis.

#### ■ Responsibilities toward People, Society, and the Environment

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(Responsibilities toward people connected with the IHI Group via our products and services)

1. We establish relationships of mutual trust with the people with whom we are involved in the course of our business, help solve social issues in a variety of fields by using our abilities to the utmost, and develop and provide products and services to assure more comfortable lives for people around the world.
2. We pay full attention to the safety of the products and services we develop and provide and constantly strive to raise the quality level of our products and services by confirming whether they satisfy customers and users.
3. We deal appropriately with other parties in our business transactions and seek profit fairly, while at the same time we strive to establish fair and mutually-productive relationships with our customers and business partners.

(Responsibilities towards those with whom we work)

We strive to respect mutually the character and individuality of all people with whom we work and maintain a safe, supportive, and comfortable environment in which we can work easily

(Responsibilities toward local and international communities)

1. With an awareness that each one of us is a member of society, we actively take part in initiatives to solve the problems faced by society.
2. No matter the region of the world where we conduct our business, we understand the value of the culture unique to each region and strive to meet the expectations of people living there.
3. We take a resolute attitude against organizations and forces that threaten social order and safety.

(Responsibilities toward the global environment)

Based on our recognition that the global environment provides the foundation for the existence of all societies and cultures, we take care so as not harm that which also will be needed by future generations and strive to protect, and reduce the burdens on, the global environment, not only in the course of our provision of products and services but also in all other aspects of our business activities.

#### ■ Roles and Responsibilities of Senior Management

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(Roles of Senior Management)

1. Senior Management recognizes that their role is to ensure the realization of this Code of Conduct and takes the initiative to demonstrate leadership in order to put the purposes of this Code of Conduct into practice.
2. Senior Management ensures that this Code of Conduct is known to all people with whom they work and constantly strives to establish, maintain, and improve effective internal systems and to enhance our corporate value.

(Responsibilities of Senior Management)

If a violation of this Code of Conduct occurs, Senior Management will strive to take the initiative to solve the problem, discover its cause, and prevent the recurrence of similar violations. They also will promptly disclose accurate information to society, clarify the responsibilities and scope of the authority of the persons involved, and impartially take disciplinary action even upon themselves.



### IHI Corporation Health and Safety Policy

#### ■ Basic Policy

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In accordance with our corporate vision "Contributing to the development of society through technology" and "Human Resources is the only and the largest asset of the company" . IHI Corporation is committed to establishing a corporate culture that puts safety as the highest priority. Every officer and employee is expected to realize that they have a responsibility for the Health and Safety activities. This ensures that all employees participate in controlling risk factors and in the promotion and safeguarding of mental and physical well-being throughout all stages of business.

#### ■ Conduct Guidelines

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To achieve the objectives of its basic policy, IHI and companies within the IHI group, shall follow the guidelines below to develop safe and healthy business operations.

1. Comply with all relevant laws and regulations on Health and Safety.
2. Ensure safety of the local society by giving due consideration to the effects of business on the region.
3. Reduce risk exposure at every stage of work in design, procurement, production and construction, to prevent industrial accidents.
4. Improve facilities and production methods to create and maintain a sanitary working environment.
5. Promote facilities and opportunities for employees to maintain and improve their mental and physical health.
6. Set concrete objectives and targets related to Health and Safety, put into action and make assessments of the results with an aim to ensure continual improvement.
7. Promote safety awareness through Health and Safety education at all levels including safety administrators to ensure all employees adhere to the principles of safety first.

## IHI Corporation Information Security Policy

IHI hereby sets the following Information Security Policy for the purpose of ensuring the security of information assets in its possession and thereby further solidifying its trust-based relationship with customers, users and society.

### ■ Basic Activities

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IHI will take appropriate measures with technology, organization and employees, in order to protect information assets against any leakage, theft, loss, destruction, illegal access, and disaster. In the event of any security problem regarding this information, IHI will locate the cause as quickly as possible, and exert every possible effort to minimize the damage incurred.

### ■ Information Assets

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"Information assets" refer to the information IHI handles in the course of business activities, regardless of the type of media, and the equipment, facilities and services necessary for handling such information.

### ■ Scope

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This Information Security Policy applies to all those using the information assets of IHI; including but not limited to executives, employees, employees of IHI affiliates, and temporary workers.

### ■ Compliance with Laws, Regulations, etc.

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IHI will strictly observe the laws, regulations and codes pertaining to the protection of information assets, and the requirements and obligations regarding information security provided for in the agreements with the customers.

### ■ Education

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IHI will provide all those using its information assets with necessary education on information security to enhance and maintain their awareness thereof.

### ■ Management of Information Security

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IHI will establish a mechanism of implementing and managing information security by taking such measures as establishing rules concerning information security and appointing persons in charge of information management, thereby conducting, maintaining and improving information security activities on a continual basis.

### ■ Responsibilities of Management Executives

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The management executives of IHI will set the example of enforcing this Information Security Policy. In the event of any infringement of this Policy, they will address the situation properly by defining their authorities and responsibilities, and do their utmost to resolve the problems, diagnose their causes, and prevent their recurrence.

### ■ Punishment

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Any action in violation of the rules of information security will incur punishment according to the office regulations.

### ■ Announcement

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After being approved at the Board Meeting, this Information Security Policy will be announced and notified to all those using the information assets of IHI as well as being announced to the public.

## Basic Procurement Policy

The IHI Group carries out procurement activities based on the guidelines set out in our Basic Code of Conduct.

### ■ Fair and Impartial Procurement

We provide business opportunities in an open manner to business partners from around the world, and welcome working with creative and competitive business partners.

We also evaluate and select business partners in a comprehensive and fair manner based on factors such as quality, price, delivery schedule, technology and financial conditions.

### ■ Mutually Beneficial Partnership with our Business Partners

We regard our business partners as value creators, and through seeking to realize optimal levels for quality, price and delivery, together with procurement reliability, we aim to establish relationships of trust with our business partners and bring about the mutual enhancement of competitiveness and prosperity with them.

### ■ Approach to Compliance and Social Needs

We comply with the related laws that govern our local and global businesses.

In addition, we promote procurement activities that prioritize factors such as the environment, human rights, labor conditions, occupational safety and health, and information management.

## Request to Our Business Partners

The IHI Group works on the following values to promote our business activities.

We ask for the co-operation and understanding of our business partners with regard to the promotion of these values.

### ■ Compliance

We ask our business partners to comply with the related laws, regulations and social norms governing their local and global businesses through the fulfillment of the following actions.

- To ensure full compliance with the related laws and regulations (e.g. commercial codes, competition law, subcontractor regulations, foreign exchange laws, personal privacy laws, intellectual property laws and environmental laws) of the countries and/or regions in which they operate.
- To prohibit the inappropriate giving of favors (any illegal or non-contractual giving of favors or dealings with anti-social forces such as organized crime).
- To prevent the inappropriate obtaining, using or disclosure of confidential information.

### ■ Paying Attention to Human Rights, Labor Conditions, and Occupational Safety and Health

We ask our business partners to respect the human rights of their employees and to assure their labor conditions, and occupational safety and health.

### ■ Ensuring Optimal Quality, Cost and Delivery Conditions

We ask our business partners to establish production and crisis management systems capable of reliably securing and providing high-quality, safe materials and services that meet our requirements in a timely manner.

### ■ Enhancement of Competitiveness

Through the sharing of issues and goals with us in order to raise our competitiveness, we ask our business partners to provide us with information on appropriate materials, technologies, methods and more, and to proactively make proposals related to Value Engineering (VE) and other methods for the promotion of cost reduction.

### ■ Respect for the Environment

We ask our business partners to comply with all environmental laws.

We also ask them to proactively carry out activities which contribute to minimizing the environmental impact, while paying attention to social needs and requirements related to the environment.

### ■ Information Disclosure

We ask our business partners to disclose information that should be made public, including their management policy, business status, financial status, and the environmental and social impact of their activities.

## Feature 1: Our Hopes in “Realize your dreams”

### Corporate Message (2012)



# Realize your dreams

We want to realize the dreams of the world.

This is why we want to contribute on a global level by fully understanding the needs of customers and people.

Therefore our work focuses on capturing the essence of technology and manufacturing skills to deliver products that are of true value.

We feel it is our duty to support our global community by being the first to connect it to the most advanced solutions in technology.

Our dream is to be entrusted with turning the world's aspirations into a reality.

Realize your dreams.

### Our 160-Year History and Commitment for the Future







The IHI Group has conducted business for 160 years since our establishment, aiming to contribute to the development of society through *monozukuri*. In the early days, the company worked to secure domestic and foreign transportation means, to contribute to the development of Japanese industry through the shipbuilding business.

Since then, we have contributed to the development of society by tackling many social issues, including increased energy demand, urbanization and industrialization, and the spread of aviation.

Looking ahead to this year's 160th anniversary, the IHI Group announced our new corporate message, “Realize your dreams” in 2012. This is an expression of our renewed commitment to remain a company that realizes people's dreams through the *monozukuri* technologies we have cultivated over our history.

The IHI Group pledges itself to address social problems and work for the sustainable development of the society through our business. We will keep challenging, and continue to respond to your expectations.

## IHI Group History

1853	Ishikawajima Shipyard is established	
1876	Ishikawajima Hirano Shipyard is established	
1877	Constructed the "Tsu-un Maru", the first steamship built by a private Japanese shipbuilder	
1907	Harima Dock Co., Ltd. is established	
1945	Manufactured Japan's first turbojet engine, the "Ne-20"	
1960	Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI) is established	
1964	Produced Japan's first mechanical excavation shield tunneling machine	
1969	Completed construction of Japan's first LNG storage tanks	
1980	Completed Japan's first variable-pressure operation supercritical pressure boiler	
1988	Completed construction of the "Second Bosphorus Bridge"	
2007	The company name is changed from "Ishikawajima-Harima Heavy Industries Co., Ltd." to "IHI Corporation"	
2010	Asteroid Explorer "HAYABUSA" returns to the earth ~Sample container is retrieved successfully~	
2013	Celebrates its 160 <sup>th</sup> anniversary	

## The voice of employees

“Realize your dreams” is a message to the world showing the strong resolution and the direction that the IHI Group will take, with its 160-year history as a *monozukuri* technology company, to remain a company that is trusted by our stakeholders where employees work with a sense of purpose.

Yet a message is nothing but mere words unless it resonates in the heart of each and every employee and moves them to put it into practice. How is “Realize your dreams” understood by IHI Group employees engaged in research and development, product design, manufacturing and customer sales? How do they view their links with society, and put “Realize your dreams” into practice in their own work?

### IHI can turn the world's dreams into reality



Assistant Foreman  
Manufacturing Group,  
Mizuho Aero-Engine Works  
Manufacturing Division.  
Aero-Engine & Space Operations  
**Tomohiro Watanabe**

I carry out maintenance works on V2500 civilian airplane engines at a factory. I have wanted to work on aircraft ever since I can remember, and I realized that dream so I feel a great challenge in my work. When I imagine how the aircraft mounted with the engines we maintain are flying all around the world, I feel that I am contributing to linking people together and linking information. From now, I want to aim at having people all over the world feel that “if it is an IHI engine, then there is no problem.” I also want us to pick up speed and gain the top global share in V2500 maintenance works. To realize a dream it is important to have a goal and think about what one should do now. Just doing your daily work is not enough - there has to be something extra. In that sense, I think that the “Realize your dreams”

message pushes me forward to do that extra something.

The world is facing various problems and issues such as energy and water, and if we could create a new unlimited fuel or if we could easily change seawater into fresh water, that would contribute to resolving global problems. Because we have the technological strengths at IHI to realize things which seem like dreams, I want us to use those strengths to help realize society's dreams.

### Striving to Make Research Results Useful in Society

I am in charge of research toward developing technologies that will be required in society in the near future. I am presently conducting research on microbubbles. We expect it will become possible to use microbubbles instead of detergent, for example, when washing parts during equipment manufacturing processes, which would lower the environmental load from not using detergent and cut costs. While this is still at the basic research stage, my dream is that someday some of the technologies I am involved with will be commercialized and become useful to society through various applications.

Our corporate message includes the phrase “capturing the essence of technology and manufacturing skills.” Sometimes research reaches a dead end, or people wonder if it will ever lead to something useful. At times like those, in this message I see the stance that our entire company values technology and

supports research. It makes me understand that my research is being supported and I feel glad. Actually, I think the reason why we can continue basic research for a long period of time at IHI is because the culture of valuing technologies and pursuing dreams is firmly established. I want us to draw together the strengths of each researcher and work at realizing society's big dreams.



Chemical System Group  
Chemical Engineering  
Department  
Products Development Center,  
Corporate Research &  
Development  
**Yuka Yoshida**

## Remembering to Always Put Our Customers First

I had a strong desire to design ships ever since I was a student, and I now work designing Floating Production Storage and Offloading (FPSO) units for offshore oil and natural gas, as well as floating offshore oil drilling units. This work is extremely worthwhile since I can feel that we are supporting customers that produce and supply energy that is indispensable to society. I feel great joy and pride when I see oil tankers and LNG carriers which affected the design in the past going on the voyage. I am convinced that the IHI-SPB tanks®\* developed originally by the IHI Group will continue to contribute to society through the development of offshore gas fields and the transportation and storage of liquefied gas.



General Manager of  
Design Department  
Aichi Works  
Offshore Project &  
Steel Structure Operations  
**Hideo Manabe**

For me, the new corporate message is a reminder of the basic policy to always put the customer first. Even if it is an inexperienced customer demand function, the character which thinks deeply to find some way to realize and challenges a new thing positively is in Aichi Works. Shipbuilding is said to be the engineering of experience, so the technology and the result of research we have so far accumulated are our great strong point. We must continue this type of “relay” of understanding the past research findings and working toward improvements by adding new knowledge.

In response to the rising awareness of environmental load and diverse demands for energy supply, the IHI Group will work on construction of maritime facilities using IHI-SPB tanks®, which can reduce environmental load.

\*IHI-SPB Tank®: IHI Self-supporting Prismatic Shape IMO Type B tank which meets the requirements for “The International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk” established by the International Maritime Organization (IMO).

## Moving Step-by-Step toward Realizing my Dream



Manager,  
Development Department  
Engineering Center  
Vehicular Turbocharger  
Operations

**Bayod Relancio  
Jose Javier**

I am currently in charge of the development of automobile turbochargers. I feel that my work – which leads to improved mileage and cleaner emissions gas – really contributes to reducing the load placed on the environment. As I gained experience, I gradually started feeling that I wanted to get involved with people and business management outside of my development work. I was given that chance when I was promoted a management position, thus, I feel that I have taken one step toward realizing my dream.

From my point of view, our corporate message states that along with realizing the dreams of society, the IHI Group also supports employees in realizing their own dreams. I have come to have various dreams while

working at IHI. One of those is to take part in linking Japan with the rest of world. Especially, since I was born in Spain, I want to serve as a bridge between Japan and Europe. And I want IHI to continue its globalization by unifying its strengths throughout the world. And in this way, IHI will be able to contribute to the development of every country. For those purposes, globalization of our human resources is important. I would like to create a culture where people can understand one another deeply, regardless of national boundaries.

## Supporting a Recovery that Fills the Heart

I offer IHI Group products to customers in the affected regions toward recovery from damages caused by the Great East Japan Earthquake. The place where I was living suddenly came to be called a disaster area. Values changed overnight, and many people must have reconsidered the meaning of true wealth. While IHI Group products are seldom seen by the general public, they actually support our daily lives in places close at hand. If we make the most of the IHI Group's technological abilities, we can provide not only convenience but also safety and security. I want to work to properly convey to customers the superior properties and technologies of IHI Group products, and to have our products used across wider areas.

I feel that the “dreams” in “Realize your dreams” have a great deal of potential. So we have to make sure that the dreams of people in the affected regions, who are our customers, can be properly realized. Our mission is to powerfully support the recovery while listening to their desires. We will cooperate with each other for the quick recovery of Tohoku so we can build a society that will enrich the hearts of the people in the regions to far greater levels than ever before.



Reconstruction Support Group  
Tohoku Branch  
Sales Headquarters

**Sachiko Suenaga**





From 2011 to 2012, the Corporate Social Responsibility Division met a several times separately with representatives of IHI's various operating divisions to discuss "What is CSR in your business activities?" The operating divisions offered a variety of ideas on work and society as well as on the company. Based on this, IHI launched the Corporate Branding Project from the second half of 2011 and tasked the project team with creating the corporate message.

The project team decided that the new message should be something that both people within the company and society in general could appreciate. For this reason, the project team considered both expectations from stakeholders and the IHI Group's goals. Below are highlights of a roundtable held by seven of the project team members on the theme of their hopes in "Realize your dreams."

### ■ Steps in Preparing the Corporate Message



## Q: What identifies IHI?

**Dobashi:** I work at Corporate Research and Development, and in there what stands out is that everyone is really serious. I feel the dedication to closely examining, researching and developing even the smallest items, and then aiming at the next target. I think this leads to our company's technological strengths.

**Yamaguchi:** There was an atmosphere at the plant where I worked in which all the employees took pride in their craftsmanship and enjoyed their work. Also, when I was responsible for sales of industrial machinery, customers often said they felt secure because IHI has strong technological capabilities, which reminded me that our company's technologies are exceptional. Our engineers take a great deal of pride in their work. I think at IHI we all want to devote ourselves to using those technical strengths to meet customer requests and help customers facing difficulties.



**Samizo:** At the Administration Division, I feel that this company is almost too serious. At the same time, I think IHI has a culture and atmosphere that promotes taking challenges to try new things and doing things for the first time.

**Yasuda:** Our management philosophy says that “people are our greatest and our only asset,” and IHI has long maintained a policy of giving young employees the responsibility to carry out important works. I am responsible for recruiting so I get to speak with many different employees, and they all comment that IHI really gives work responsibilities to employees while they are still young. I think it is an environment in which IHI fosters a broad-minded spirit to take on new

challenges.

**Oura:** I work at Public Relations so I sometimes I receive phone calls from shareholders. Some call with complaints, but others kindly say that they like IHI and will continue to own our shares. It is the 160th anniversary this year. The company has had ups and downs over its long history and has not always been at the top, but I feel IHI is a company that has been loved for many years.

**Takahashi:** When I visit IHI plants and affiliated companies, I meet many workers whose eyes sparkle like little children when they ask me to see their technologies. IHI has remarkable technologies and many hard-working people, so those technologies may be linked to create something new. The IHI Group has a lot of material with the potential for innovation -- technologies that we can bring together to create something new.

**Numaguchi:** When I entered IHI, there was an atmosphere which made it easy to take on new challenges. When I speak with the various divisions today, it seems that spirit still remains strong. There is the impetus to give something a try because it looks interesting. I want to always retain that spirit which is distinctive to IHI.



**Q:** What typed of hopes are incorporated into the IHI message “Realize your dreams”?



**Yamaguchi:** We have always wanted to be our customer's partner. By providing products and services to society through our customers, we work together as partners to resolve the problems facing society. To me, “Realize your dreams” really has the image of realizing everyone's dreams together. I am responsible for training employees hired at our overseas bases, and I want to convey this new message to them – I want to get it into their mind that if they work hard they can realize their dreams at IHI group companies and benefit our customers at the same time.

**Yasuda:** The “your” in “Realize your dreams” does not only refer to customers, but also includes IHI Group employees. The IHI Group realizes the dreams of people all over the world. We are also a company that realizes the dreams of IHI Group employees. I want to skillfully convey the message that we first realize the dreams of our customers and the dreams of society, but I also want to convey to our employees that we want them to realize their dreams at the IHI Group.



**Numaguchi:** When we held a company meeting to explain this message, what I said is that “Realize your dreams” is not just a PR statement. Rather, each employee has to think about how he or she can explain it. It is the fundamental way of thinking behind the IHI Group's Corporate Social Responsibility (CSR) and the IHI Group's CSR vision. I want our employees to think about what they can do in their positions watching customers, co-workers, and society as a whole. If we can they do that, our efforts will naturally respond to the expectations of society without using the term CSR.



**Oura:** As public relations, I believe that this message is helpful for employees to take pride in working at the IHI Group. While there are also activities to boost the name recognition of the IHI Group directed outside the company, I also want to present messages in a way that allow employees to feel glad they joined the IHI group, take pride and pursue their dreams in their work.

**Samizo:** I want to send this message properly to our shareholders. Individual investors invest their funds not only based on financial performance but also because they find IHI's business attractive because it has dreams and a future. I think it is important to properly convey this message to increase such

shareholders.

**Dobashi:** We need to remember that the individual activities of employees working in design, development and other frontline positions are like pieces of a dream, and that we realize everyone's dreams by collecting them together. I want to share this throughout my division.

**Takahashi:** "Realize your dreams" is aimed at realizing the dreams of our customers, and I want everyone to understand that we realize customer's dreams by properly performing our own functions. I think the experience of success, of having realized dreams, is required for us to say "Realize your dreams." By building up cases of success, the IHI Group wants to establish the organizational culture that allows us to say with pride that our company can realize various dreams with our technology. And I want those employees actually engaged in manufacturing to have dreams one after another. I think the real image of IHI Group is a place where engineers can envision and pursue various dreams which leads to the development of the company. I think a company that pursues its dreams can go on forever, and the IHI Group can continue to realize the dreams of society for years to come.



(Affiliations as of March 28, 2013)

## Feature 2: Addressing Social Issues through Business Activities

### The IHI Group's Management and CSR

In preparing our new medium-term management plan, Group Management Policies 2013, the IHI Group conducted analyses on social megatrends. These went beyond a simple forecast of the world economy to the consideration of the background changes in the global environment and social dynamics, as well as the political factors likely to arise in response, and to the examination of the issues that society should address for the future.

Urbanization and industrialization are accelerating due to the increase in the world population, along with the advance of globalization in economics and other fields and the spread of ICT.\* With these developments, many issues are emerging, such as stable energy supply and the prevention of global warming, that must be resolved for sustainable social development. We believe the world now needs “smart social infrastructure,” which meets society’s fundamental and important requirements.

By providing products and services which meet such needs, the IHI Group seeks to create value for society and thus realize our own growth. We are examining how we will create value for society through our business activities with the new organizational structure launched across the Group in April 2013. The IHI Group is also establishing a CSR Committee this summer which will regularly confirm the impact of our business activities on society.

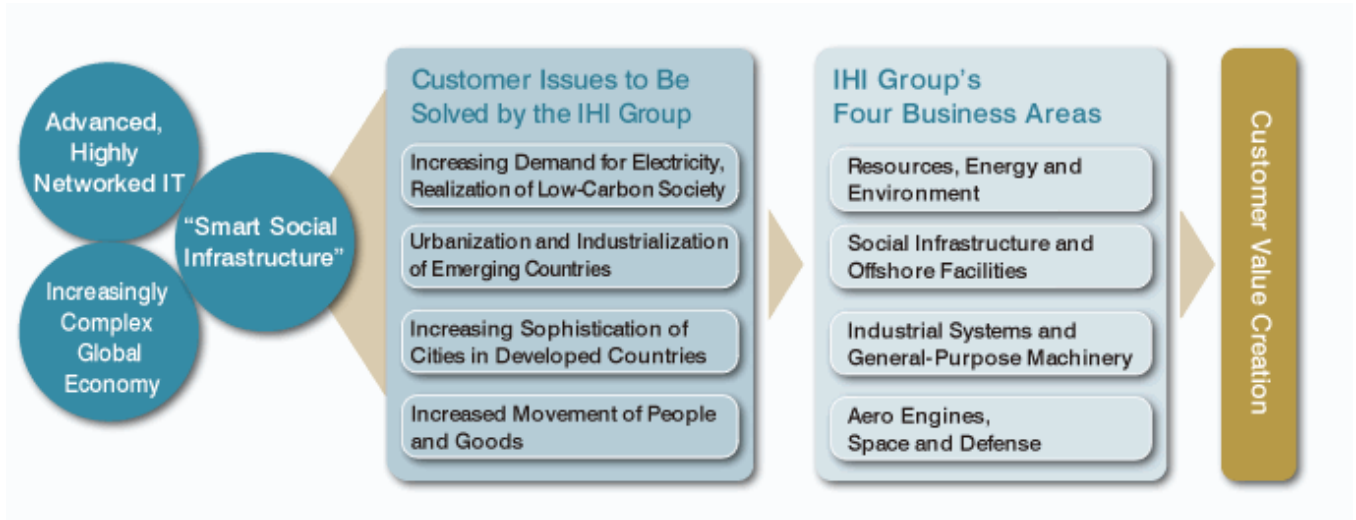
Through such efforts we will further strengthen ties within the IHI Group and have the entire Group steadily increase our contribution to society.

\* “ICT” is the abbreviation for “Information and Communication Technology.”

#### IHI Group Aims

**The IHI Group seeks to solve the various environmental, industrial, social and energy related problems of the 21<sup>st</sup> century through using engineering expertise to focus on “*monozukuri*” technology. In striving toward these goals, the IHI Group is becoming a global group offering abundance, safety and security for the benefit of both the environment and humanity.**

(IHI Group Vision: May 2009)



## Monozukuri Technology Resolving Social Problems

The IHI Group aims at achieving the following solutions to social problems, creating value for customers, and contributing to the development of society through *monozukuri* technology.\*

\**Monozukuri* technology means the technology used to improve the competitiveness of products and services offered by strengthening the capabilities required in development, design, supply, manufacturing and construction.

- Delivering a Stable Supply of Energy
- Responding to Urbanization
- Contributing to the Realization of a Low-Carbon Society

### Delivering a Stable Supply of Energy

Society demands stable electric power supply to accommodate increasing electric power demand and changes in social conditions. The IHI Group will continue to provide products and technologies that facilitate and play a vital part in electric power supply from diverse energy sources by using the experience and sophisticated technology development abilities cultivated over many years.

## Toward Continuous Energy Supply

### ■ LNG Plant

The IHI Group is contributing to long-term stable electric power supply as an industry leader in overall engineering for low-temperature storage tanks and entire LNG receiving terminals.



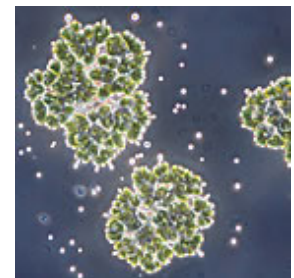
### ■ Small-Scale Binary Electric Power Generation Heat Recovery HR Series

Small-scale binary electric power generation devices make it possible to effectively use hot water below 100°C discharged at dispersed locations in factories and other facilities from which heat energy recovery was previously difficult.



### ■ Algae Biofuel

The IHI Group is working toward the production of biofuel from the large-scale cultivation of Enomoto Algae. This is expected to be used as a future substitute for jet fuel and heavy oil. The research and development will now focus on increasing the cultivation scale, improving the oil separation and recovery from the algae, and further improving the algae performance.



## Responding to Urbanization

There are growing concerns about a variety of risks arising from the concentration of population into urban areas. Building disaster-resistant cities has become an important issue in Japan in particular. The IHI Group will continue to use the infrastructure support technologies we have developed to support people's lives and enhance the safety of society.

## Building Disaster-Resistant Cities

### ■ Hybrid Caisson

This is a hybrid structure of steel plate and reinforced concrete which provides high strength and fast construction. To contribute to the reconstruction of the Tohoku region which was struck by a massive earthquake and tsunami in 2011, the IHI Group is applying technology which has hitherto supported social infrastructure to manufacture breakwaters and other large structures.



## ■ Active Mass Dampers

Along with the increasing heights of buildings in recent years, there has been growing interest in active mass dampers to limit swaying when earthquakes occur. Using linear motors, the IHI Group has achieved outstanding vibration control performance with higher thrust and higher speed than in the past, addressing concerns regarding the safety of high-rise buildings under long-period ground motion.



## ■ QCAST® Series Earthquake Early Warning Receiving System

This QCAST® Series receives Japan Meteorological Agency “Earthquake Early Warnings” and estimates and displays the projected quake magnitude and arrival time. The device calls attention with displays and broadcasts, turns off equipment and facilities by using contact output and makes other preparations in the few seconds before an earthquake arrives.



## Contributing to the Realization of a Low-Carbon Society

### ■ IHI Group Environmental Vision 2013

**The IHI Group, as a responsible global group, aims to preserve the global environment on a continuous basis through cooperation with our customers and business partners around the world.**

(IHI Group's Environmental Vision 2013)

Industrial development has provided us with a convenient lifestyle, but it has also brought about the consumption of vast quantities of energy and placed a great load on the global environment. There are concerns that climate change caused by greenhouse gas emissions is increasing the number of large-scale floods and typhoons, causing droughts, and affecting ecosystems.

To contribute to a sustainable society and leave a rich global environment for future generations, the IHI Group has been reducing and will continue to reduce environmental load and to address environmental issues through the provision of environmentally friendly products and services.

The IHI Group announced the IHI Group's Environmental Vision 2013 in April 2013 to further promote environmental management.

With the establishment of this Vision, the IHI Group is striving to preserve the global environment and to reduce environmental load in every aspect of our business activities. We especially aim at reducing environmental load through products and services, and dedicate ourselves to providing more environmentally friendly products. For broader recognition of such initiatives throughout the IHI Group,



we are calculating our CO<sub>2</sub> emission reduction contribution and other environmental properties of our products and announcing that information.

In fiscal 2012, we compiled the IHI Group's basic approach to environmentally friendly products and made preliminary calculations of the environmental properties of a few representative products. From fiscal 2013 we will expand the range of products covered and upgrade our provision of information on the environmental properties of IHI products and services.

## ■ Green Technologies Being Advanced by IHI

### **New Diesel Engine Meets Stricter Emission Regulations**

IHI Shibaura Machinery Corporation has developed a new nonroad diesel engine, model N4LDI-TA, that complies with new exhaust emission regulations called the U.S. Environmental Protection Agency (EPA) Final Tier 4 emission standards (effective from January 1, 2013). The Tier 4 standards require the reduction of permissible particulate matter (PM), which is a hazardous substance, to one-tenth of that under the current regulations.



Unlike other Tier 4 diesel engines, the newly developed engine does not use a diesel particle filter (DPF) to trap the PM in the engine exhaust gas. Instead, the new standards were cleared by making the combustion inside the engine cleaner. This also greatly improves fuel efficiency and decreases CO<sub>2</sub> emissions.

The engines were put on the market in early 2013.

### **Turbocharger Contributes to Clean Transport**

With the advance of motorization, the total number of automobiles just keeps increasing with particularly outstanding growth in the newly industrializing economies. As a result, highly energy-efficient automobile engines that place minimal load on the global environment are needed. Turbochargers use the energy in automobile exhaust to supply pressurized air to the engine, and are attracting attention for their contribution to realizing a low-carbon society.



The IHI Group's turbochargers have top-class performance, and have already been mounted in more than 40 million vehicles from subcompacts to heavy-duty trucks. A 1.4 liter engine with a turbocharger provides the same level of driving performance as a 2.0 liter engine with no turbocharger, and cuts fuel consumption by about 20 percent and consequently contributes to reducing CO<sub>2</sub> emissions as well.

Turbochargers also remove PM and NO<sub>x</sub> in exhaust gas and are expected to be adopted more widely from now on.

## Low Environmental Load Jet Engine

Air transportation traffic volumes have been steadily increasing as the global movement of people and goods becomes commonplace. So it is necessary to reduce CO<sub>2</sub> emissions and combustion emissions from aircraft and also to reduce noise from aircraft to improve the living environment near airports. The IHI Group is the market leader responsible for 60 to 70 percent of all jet engine production in Japan. Fuel efficiency



must be improved to cut the CO<sub>2</sub> emissions from jet engines. To boost fuel efficiency, it is necessary to increase the size of the fans, which raises propulsion efficiency, and to make higher-pressure and lighter engines.

To achieve this, the IHI Group is engaged in the development of cutting-edge aerodynamic technologies, Carbon Fiber Reinforced Polymers (CFRP), and Ceramic Matrix Composites (CMC) technologies. The IHI Group is also working on technology development to reduce NO<sub>x</sub> and other combustion exhausts, which are hazardous substances, and to reduce engine noise.

## Compressor Contributes to Energy Conservation at Factories

Compressors are factory facilities that generate pressurized air. Their electricity consumption is high among plant equipment, and may account for as much as 10 to 30 percent of total energy consumption at a typical factory, so improving the efficiency of compressors is an important point in advancing energy conservation at factories.



The T2 series use a new type of both impellers and bearings,

developed by the IHI Group, to process 2 percent more air than previous compressors using the same amount of electricity. This leads to energy conservation and a reduction in CO<sub>2</sub> emissions.

The T2 series reduce waste because they are oil-free compressors with no oil in the discharged air, and they also reduce noise with an effective enclosure (sound absorption cover).

## The IHI Group's Coal-Fired Power Generation Technologies—Moving Beyond Carbon Neutral

Coal-fired power generation accounts for about 40 percent of the world's generated electricity. Coal has such advantages as large reserves, wide availability across regions and stable price, so coal-fired power generation is expected to continue to be an important electricity source from such perspectives as energy source diversity and economic efficiency.

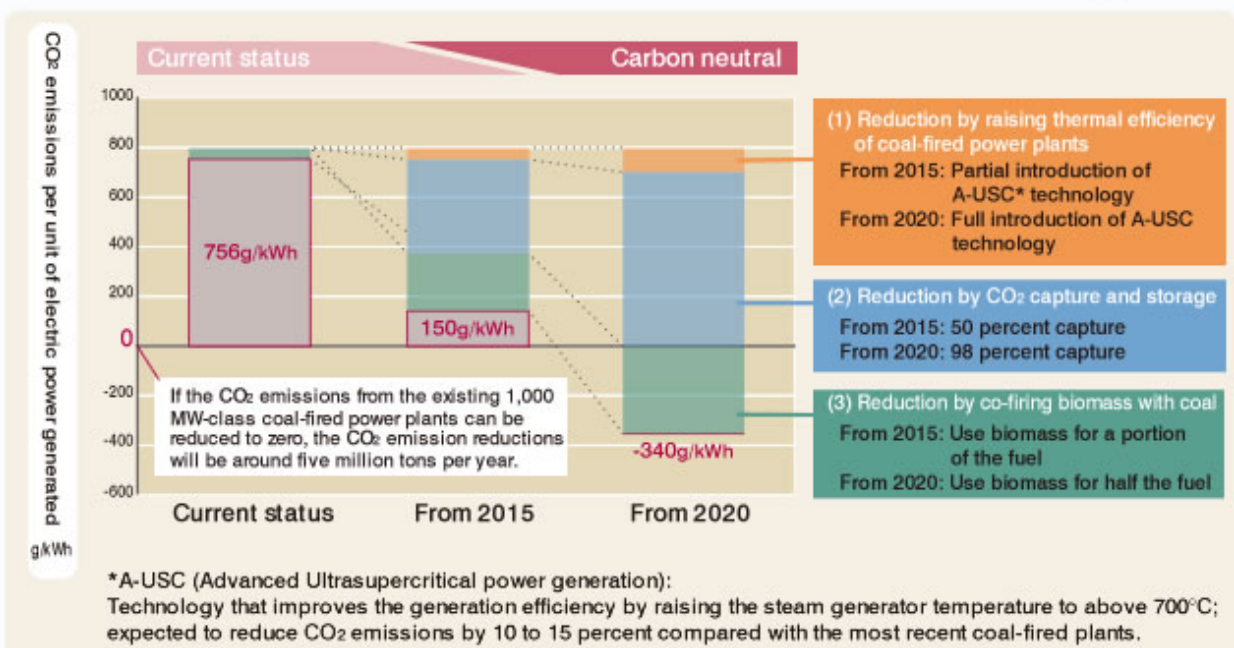
## « Innovative CO<sub>2</sub> Reduction Technologies in Power Generation »

Coal has the highest rate of CO<sub>2</sub> emissions per unit electricity generated among all fossil fuels used for thermal power generation, so the reduction of CO<sub>2</sub> emissions is becoming an issue for coal-fired power plants.

To contribute to the reduction of CO<sub>2</sub> emissions from coal-fired power plants, the IHI Group is pursuing technological development in such areas as raising thermal efficiency, co-firing biomass with coal and Carbon Capture and Storage (CCS) technologies.

The IHI Group provides CO<sub>2</sub> emission reductions measures that meet each customer's needs. Combining these technologies together leads power generation beyond carbon neutral to actually enable atmospheric CO<sub>2</sub> reductions through power generation.

## « Technologies for Carbon Neutral and CO<sub>2</sub> Emission Reduction Roadmap »



## Example of Carbon Capture and Storage

### ■ **Leading-edge Technology for CO<sub>2</sub> Emissions Reduction: The World's First Oxyfuel Combustion and Carbon Capture Field Test Begins at an Actual Power Plant in Callide-A Power Station , Australia**

The introduction of CCS technologies is deemed effective in reducing CO<sub>2</sub> emissions from coal-fired power plants.

The Callide Oxyfuel Project, a CCS project, applies oxyfuel combustion technology to a unit at an existing 30 MWe coal-fired power plant (Australia), captures the emitted CO<sub>2</sub> and stores it underground, with the final goal of verifying the entire process. Oxyfuel operations began in March 2012, and the first trials of CO<sub>2</sub> liquefaction from oxyfuel flue gas started in December 2012. The operating hours of the plant are now being steadily expanded.



Callide A coal-fired power plant (Queensland, Australia)

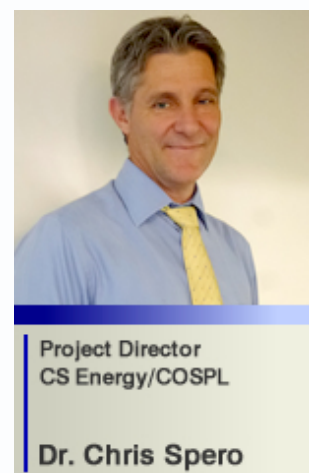
IHI has been developing oxyfuel combustion technology, a CO<sub>2</sub> capture technology, since 1989, ahead of other companies. The Callide Oxyfuel Project is being conducted by multiple Japanese and Australian enterprises and one organization with support from the governments of Australia and Japan and the government of the state of Queensland. IHI is participating in the project to apply and evaluate oxyfuel combustion technology and is working to verify this technology for CO<sub>2</sub> emissions reductions together with other project participants toward commercialization.

If this project proceeds as expected, it will establish a revolutionary new CO<sub>2</sub> emissions reduction technology for coal-fired power plants and contribute to the prevention of global warming.

## Voice

### **Q1. Let us know an overview of the project. And what is your vision of this project?**

The Callide Oxyfuel Project brings together three technologies – oxygen production, oxy-combustion of coal, and CO<sub>2</sub> capture. Our vision was to participate in an international effort to demonstrate low emission coal technology for the production of electricity; recognizing that for this global mission to succeed, a portfolio of technological solutions was needed that could be applied to new power plants and as a retrofit to existing power plants. The Callide Oxyfuel Project is characterized by its innovation and practicality, and has taken us to the next step of realizing our high-minded ambition.



Project Director  
CS Energy/COSPL

Dr. Chris Spero

## Q2. Why the project chose IHI for Oxyfuel Technology?

There are several reasons. The concept of Oxyfuel combustion was introduced to us by IHI in 2003, and it was clear from published work that IHI were world leaders in this field. In addition, IHI have a history of innovation and good engineering, and have a strong presence in Australia. The third and decisive reason was that IHI demonstrated a willingness to participate directly in a Joint Venture to undertake the project and to share the inherent risks that are always associated with large scale first-of-a-kind demonstrations.

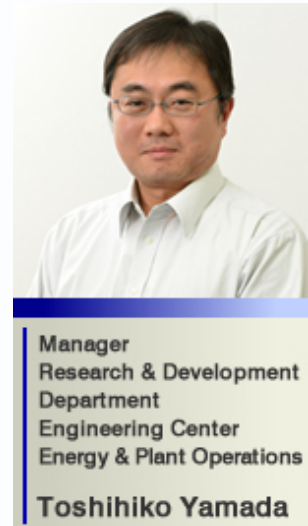
## Q3. What can be expected from IHI Group in developing Oxyfuel Technology?

IHI have demonstrated a great commitment to the Callide Oxyfuel Project and to the Joint Venture. Our expectation is that IHI will maintain this commitment and continue to show the technological leadership that will be required to commercialize Oxyfuel technology.

### Voice

I am engaged in oxyfuel research and development, and I have been involved as a project member since its inception. When I hear such news as how the ice in the Arctic Ocean is shrinking, I feel that my own work is contributing to solving environmental problems. But we still have many technological issues to solve, including how to further improve plant efficiency.

I want to first make this project successful and then push forward with the ultimate goal of commercializing oxyfuel combustion technology and moving on to the next project. Nothing makes me happier than working with other members of our group together toward this goal.



### Voice

I compile various operating characteristics from the trial operations data to accumulate the data required for the commercialization of oxyfuel combustion technologies. When we conduct CO<sub>2</sub> capture by liquefaction trials, in particular, I really feel how my own work contributes to solving environmental problems.

I will continue collecting the various operating properties and working at resolving the issues toward commercialization of oxyfuel combustion technologies. I am eager to move forward with the trials toward more sophisticated and efficient operations, and to spread information about the superiority of oxyfuel combustion.



## State-of-the-Art Technologies to Solve New Social Problems

The IHI Group is taking on the challenge of addressing the wide range of problems “located anywhere from the Earth to outer space.” Our Twin IHI Gasifier, which effectively utilizes the unused resource lignite that lies buried in the ground, and Space Debris Remover are drawing attention as desirable initiatives.

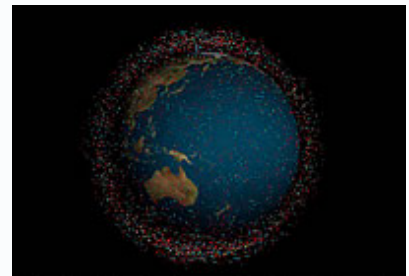
### ■ Twin IHI Gasifier (TIGAR®)

This gasifier turns the resource lignite, which has not been effectively used to date, into gas to generate hydrogen and methane. These are then changed into chemical raw materials and fuels, and used in diverse applications.



### ■ Preservation of the Space Environment

There is a great deal of debris in nearby space where satellites orbit the Earth. The IHI Group is using its cutting-edge technologies to reduce space debris and create a safe and clean space environment.



Provided by Professor Toshiya Hanada,  
Kyushu University



# Management

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## Corporate Governance

### Fundamental Policies

IHI defines corporate governance as a system designed to maximize corporate value by increasing efficiency of management to leverage the company's capabilities to the fullest extent possible. To attain this, IHI clearly demarcates management oversight functions from task execution functions and works to make corporate decision making as effective as possible. In also building a corporate governance system that maintains and administers all related rules and regulations, IHI ensures appropriate operations across the entire Group.

### Corporate Governance System

Classified as a “company with Audit & Supervisory Board,” IHI elected five corporate auditors (three of whom are outside corporate auditors). Comprising fifteen directors (two of whom are outside directors), the Board of Directors makes decisions related to important matters concerning the management of IHI and the Group in addition to overseeing directors in the execution of their duties.

Drawing on the wealth of experience and superior insight gained in their many years as managers, the outside directors participate in the Board of Directors' decision making. This they do from a position of independence from the management team that conducts the execution of business, to whom they offer advice and make recommendations.

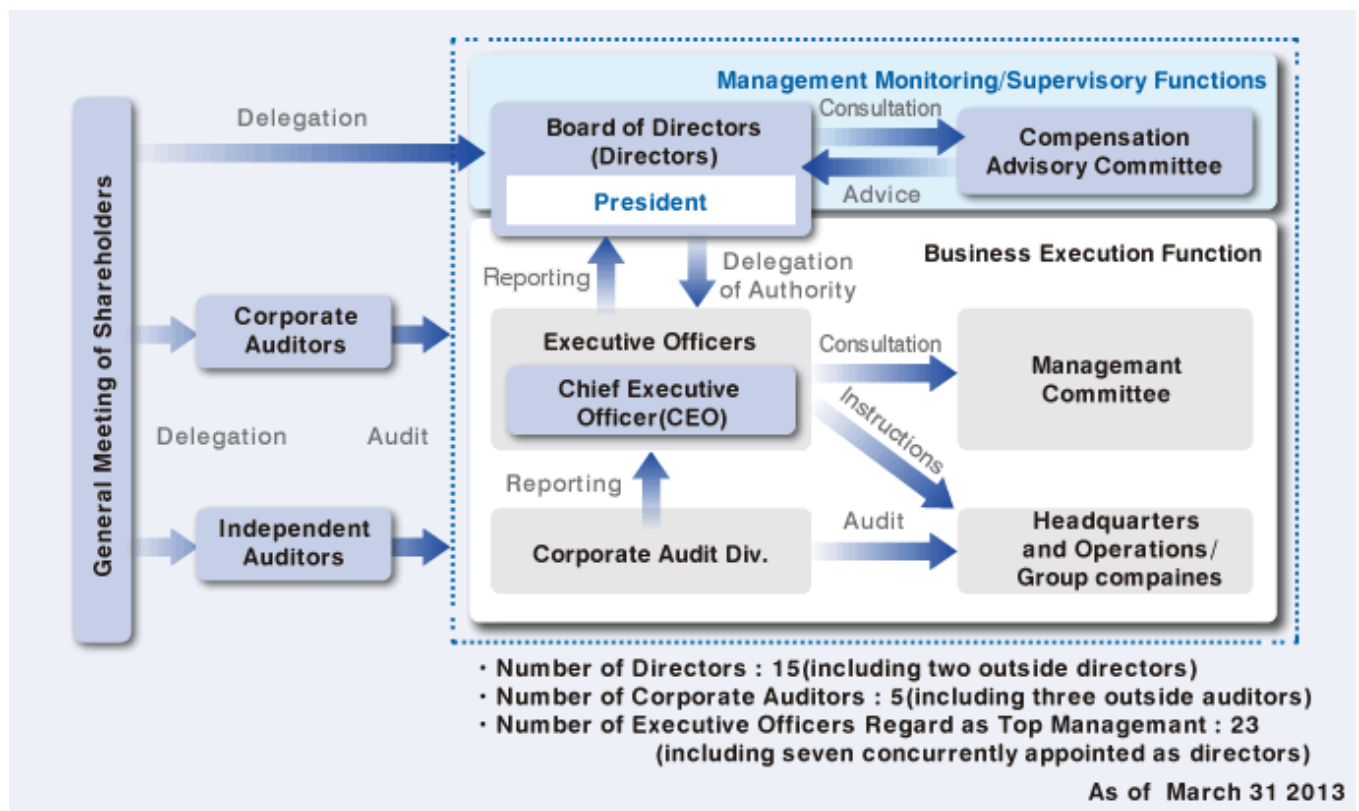
IHI introduced an executive officer system to strengthen the decision-making and supervisory functions of the Board of Directors as well as to improve the efficiency of business operations. Appointed by resolution of the Board of Directors, executive officers (numbering twenty-three, seven of whom also serve as members of the Board of Directors) execute the duties for which they are responsible under the CEO's guidance and supervision.

We have established a Management Committee, comprising persons appointed by the CEO, as a function supporting the CEO in decision making and operational execution.

To ensure propriety in director remuneration, IHI set up a Compensation Advisory Committee that consists of four members: an outside director who acts as committee chair, an outside corporate auditor, the board member in charge of human resources, and the board member in charge of finance.



## Corporate Governance Management Structure



## Outside Directors and Outside Corporate Auditors

IHI elects two outside directors and three outside corporate auditors. From the perspective of managers with a wealth of experience, the outside directors monitor IHI in the execution of its business. From the perspective of managers with a professional point of view and a wealth of experience in such areas as compliance, the outside corporate auditors and IHI's own standing corporate auditors perform audits in collaboration with, for example, the Corporate Audit Division to sufficiently ensure fairness in IHI's business. To ensure outside director and outside corporate auditor impartiality, IHI takes into consideration the criteria related to outside director impartiality stipulated by Japan's Financial Instruments Exchange and the status of their business relationships with IHI and the companies from which they have come. Because IHI elects highly impartial outside directors and outside corporate auditors who have not come from the parent company, sister companies, major shareholder companies or main business partners, advisory and supervisory functions as well as checks and balances functions from an objective perspective related to IHI's business execution are sufficiently fulfilled..

Outside directors and outside corporate auditors receive reports on the status of internal audits as required from the Corporate Audit Division at meetings of the Board of Directors and the Audit & Supervisory Board and exchange information. In addition, outside corporate auditors maintain a close liaison with independent auditors by regularly exchanging information and opinions and receiving reports of audit results from them. In its implementation of corporate governance measures, IHI considers the current system of outside directors and outside corporate auditors to be a fair one.

## Compensation for Directors and Corporate Auditors

Limits on total director and corporate auditor remuneration are determined by resolution at the General Meeting of Shareholders. Directors' remuneration is a reward system that aims to improve the Group's business results and corporate value and emphasizes sharing the risks and returns of stock price fluctuations with shareholders, while considering levels of remuneration necessary to secure superior human resources. Directors' remuneration consists of a base amount, stock compensation-type stock options and performance-based bonuses (outside directors receive a base amount only). The amounts and eligible recipients are determined at a meeting of the Board of Directors based upon recommendation reports from the Remuneration Advisory Committee (the "Committee").

Remuneration for corporate auditors is paid under a fixed-rate system, as corporate auditors have responsibility for auditing operations throughout the Group. The amount is determined through discussions among corporate auditors.

The Committee was established to ensure the adequacy of remuneration and the transparency of payment procedures. The Committee consists of four members: an outside director who acts as committee chair, an outside corporate auditor, the director in charge of human resources, and the director in charge of finance. The committee chair makes final decisions on the Committee's recommendations.

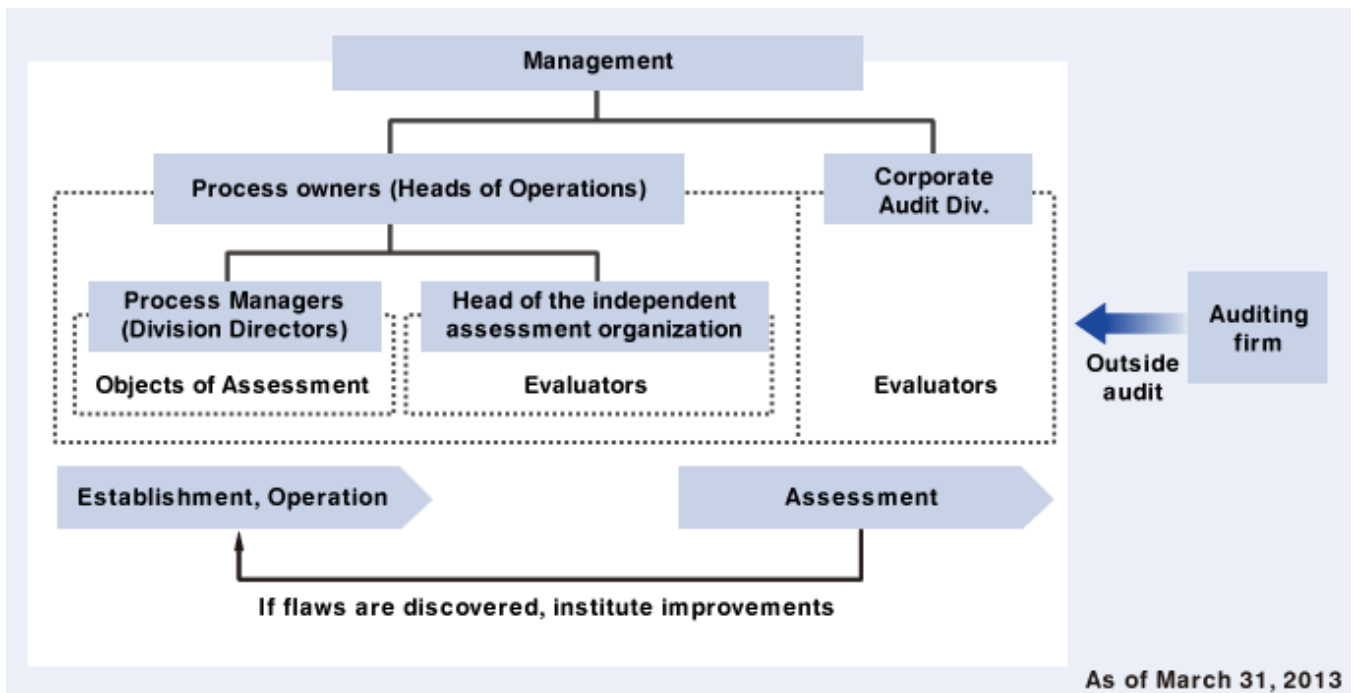
In FY2012, total annual compensation paid to the Board of Directors was ¥759 million, while total annual compensation to the corporate auditors was ¥87 million.

## Internal Control System

At IHI, the fundamental policies underpinning the establishment of an internal control system are designed to raise the effectiveness of corporate governance and increase the corporate value of the IHI Group. These fundamental policies guided us in establishing a framework to achieve sound compliance and enhanced risk management. At IHI, we realize that establishing a dependable internal control system represents essential infrastructure in our efforts to expand the IHI Group's businesses globally and we are working to maintain and operate management systems that are shared within the Group.

In response to cases of window dressing and other accounting improprieties, Japan instituted an internal control reporting system (J-SOX) based on the Financial Instruments and Exchange Act. The J-SOX system mandates the implementation and operation of internal controls for the preparation and disclosure of proper financial statements, as well as the submission of a report evaluating the effectiveness of such controls. An evaluation of the IHI Group's internal controls for FY2012 found no flaws that would have warranted disclosure.

The Corporate Audit Division is charged with contributing to efforts to strengthen and optimize the internal management systems of executive divisions. From the monitoring standpoint, the Corporate Audit Division raises the competitiveness of Group companies and underpins improvements in corporate value.



## Project Control System

We established a Project Audit Division for the purpose of assessing whether large-scale projects (for example, construction projects subject to the percentage of completion method\*) have been properly evaluated at the implementation stage with regard to the management status of projects and risk assessment, and whether a project's estimated profitability has been properly and transparently calculated.

In the course of FY2012 (ended March 31, 2013), a total of 67 Group construction projects was audited. The IHI Group audits the management status of the large-scale projects that it undertakes in and outside Japan from the following viewpoints:

- Adequacy of the project's execution system and execution plan after receipt of order
- Appropriateness of management status of total construction cost (estimated final cost at completion of the project) relative to the project's progress
- Transparency, appropriateness and timeliness of the project's estimated profitability

At the estimation stage of large-scale projects, IHI implements a screening process related to project execution risk, which concentrates on the verification of project execution systems and the validity of the execution plan, and endeavors to maintain profitability after the receipt of an order.

For the sake of adequacy and timely rectification, we will continue to implement audits of the management status and risk assessments of works, including local assessments, and enhance audit quality. We will give prior notification of the items to be audited to promote each department's independent evaluation and continue to implement activities that will enhance the feedback of audit results, such as by the lateral communication of audit results and making Group's internal information as case studies.

**\*Construction projects subject to the percentage of completion method:**

large-scale construction projects, where sales and profits are not booked after construction is completed but per year in line with the progress of work on the project.

**Topic** Details of Project Audit Criteria

In FY2012, IHI introduced audit criteria by project level. For the management status audits carried out by the Project Audit Division, the most appropriate audit is conducted by applying audit methods compatible with the particular characteristics (such as the extent of IHI's scope of work in and contract amount of the received order) and execution conditions of individual projects. IHI works to improve the quality of audits for large projects, the number of which is expected to increase in the years ahead. To better clarify the content and viewpoint of the audits, these are published internally, enabling views on project management to be shared within the Group. IHI maintains audit quality while working to streamline the project audit process.

## Compliance

### Fundamental Policies

Compliance provides the foundation for a company to conduct its activities in society. The IHI Group's policy on compliance is based on the following:

- Adhering to rules, such as laws and internal regulations
- Taking fair and responsible action as a corporate entity

This means not only remaining in compliance with laws and regulations, but also meeting the demands of society at large.

In FY2012, IHI engaged in activities that focused on reviews of its rules related to business tasks. This move was designed to reconfirm that there was no gap between existing rules and the current operational status in terms of the business environment and other factors that have changed and whether there was any possibility of an event that could develop into a case of compliance-related misconduct.

In addition, in response to the broadening scope and diversification of risks that could arise in the course of business globalization, the IHI Group as a whole tackled risk management with a focus on three areas: safe export controls, banning the bribery of overseas civil servants, and laws governing competition.

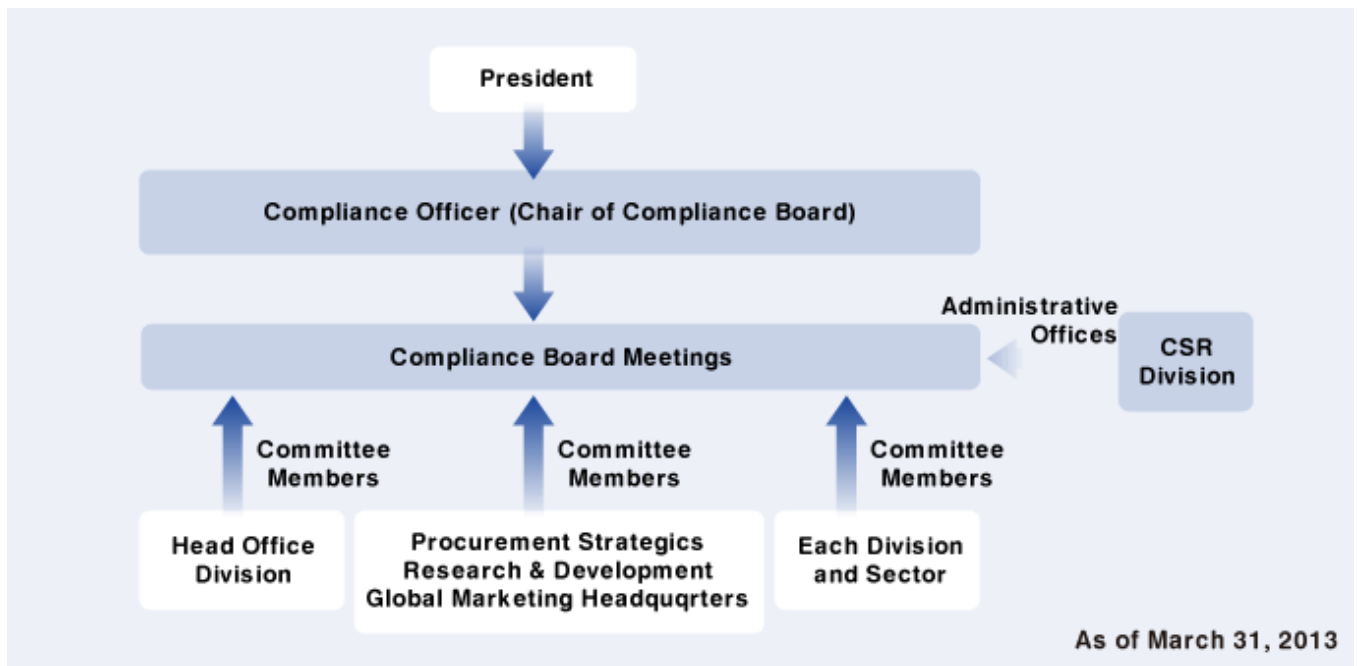
### Compliance System

#### Compliance Board Meetings

In accordance with the Basic Code of Conduct for the IHI Group and basic compliance policies, IHI set up a Compliance Board, which meets four times a year, with a view to deliberating, planning, and promoting important policies.

Based on the Compliance Board's action plan for the relevant fiscal year, each business unit undertakes division-level compliance activities, including the group companies for which it is responsible, depending on its own business structure. Sharing information on the status of activities and challenges while utilizing the plan-do-check-act (PDCA) cycle, the Compliance Board makes steady progress with initiatives throughout the IHI Group.

## Compliance Organization Chart

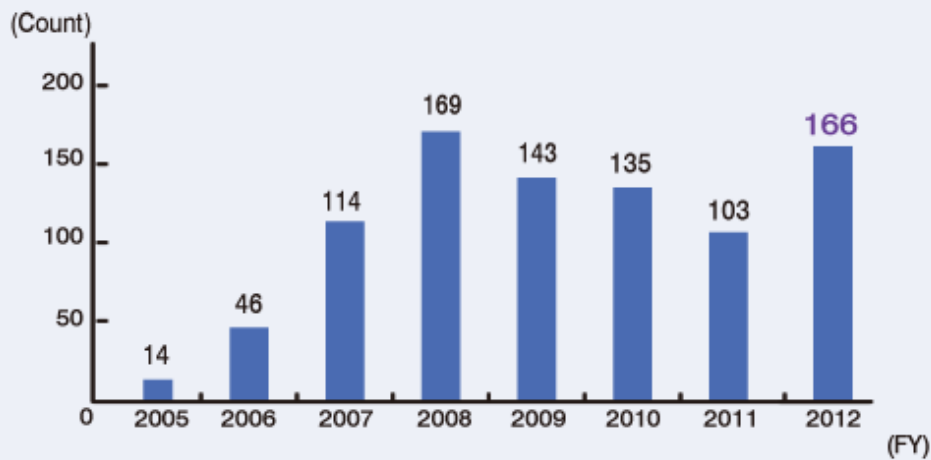


## Compliance Hotline

The IHI Group has established a Compliance Hotline (hereinafter, the Hotline) in order to ascertain at an early stage or in advance any wrongdoing or any behavior that causes concern that it might contravene laws, internal regulations or internal and external rules and to rapidly correct any such situation. IHI employees have direct access through this hotline to an expert outside organization, the Corporate Ethics Hotline, to seek advice. Hotline Cards, which specify the Hotline mechanism and method of use, are distributed and publicized to all employees, including top management and temporary employees.

In FY2012, 166 incidents were reported to the Hotline. This represented an increase on the previous year, but we recognize this is attributable to the effects of Hotline Card renewal and redistribution at the end of FY2011 and awareness-raising by again advising employees of the Hotline contact point during e-learning programs related to compliance.

Most of the advice imparted had to do with the callers' interpersonal relations in the workplace, and sincere efforts were made to rapidly resolve each incident.



## Promoting the Awareness and Spread of Compliance

### Compliance Education

Compliance awareness is maintained and improved through compliance education undertaken on a continuous basis in group companies and affiliates through level-specific training, e-learning programs, and workplace dialog activities. In FY2012, there was a focus on harassment prevention training that was extended to top management level and regional and plant executive level, including at affiliated companies. As part of the e-learning program related to harassment prevention, IHI conducted anonymous questionnaires, in which individuals were not specified, to gather information on the actual conditions at a workplace, and we were able to connect the results to improvement activities.

At business units, divisional compliance managers are primarily responsible for conducting training to provide a deeper understanding of laws related to business.

### Corporate Ethics Month

In October, which is designated as Corporate Ethics Month, the compliance officer sends messages to the executives of each business unit encouraging them to address compliance by reviewing their own compliance procedures and reaffirming their roles and those of their divisions.

### Writing *Senryu* about Compliance

In order to give all employees the opportunity to look back on their own actions or those of their workplace, we invited them to submit *senryu* (a type of satirical poem) on the topics of compliance and CSR.

Employees submitted more than 400 *senryus*, the best of which were showcased in internal publications.

## Compliance Training

Line manager training includes training on management of complexity in business activities, demonstrating one's role as a line manager, and self-understanding. To date, more than 430 line personnel (73 in FY 2012) have taken part. In addition, around 500 people, including those from affiliated companies, have taken part in level-specific compliance training. A breakdown of the numbers of people who have attended is as follows.

Position level	Number of participants
Newly appointed heads of divisions	97
Mid-level employees	196
Divisional compliance managers	25
IHI corporate officers	25
Corporate officers of affiliated companies	57
Managers of affiliated companies	113

## Compliance Initiative

With increasing globalization and borderless implications of corporate actions, fair international competition in terms of price and quality has become increasingly necessary to secure commercial opportunities. There is a growing international awareness that corrupt acts such as illegal payoffs must be stamped out. Against a backdrop of regional conflicts and terrorist acts around the globe, security trade controls have never been more important. Our compliance initiative has three main focuses: fair trade, anti-corruption, and security trade control.

### Fair Trade Law Compliance

In addition to training IHI Group employees to comply with Japan's Antimonopoly Act, the American Sherman Antitrust Act, and EU competition law, the IHI Group is working to make the bidding process for public works projects more transparent. No fair trade law violation occurred during the 2012 fiscal year.

### Anti-Corruption Law Compliance

The IHI Group regularly trains its employees regarding the US Foreign Corrupt Practices Act (FCPA), the UK Bribery Act of 2010, and Japan's Unfair Competition Prevention Act. In addition, risk is monitored at both domestic and overseas sales offices throughout the IHI Group. Currently, IHI implements two sets of internal regulations concerning anti-corruption: a Basic Policy that reflects IHI's commitment to prevent corruption, and Operational Guidelines that set out specific procedures and concrete examples. No anti-corruption law violation occurred during the 2012 fiscal year.



In the 2012 fiscal year, IHI put much effort and resources into educating employees about IHI's internal regulations concerning fair trade and anti-corruption. In addition to traditional classroom training conducted by internal instructors, we provided training sessions conducted by external instructors such as lawyers. We also offered e-learning programs. A total of 8,264 people participated in at least one kind of training in the 2012 fiscal year, a participation rate of 85.4%.

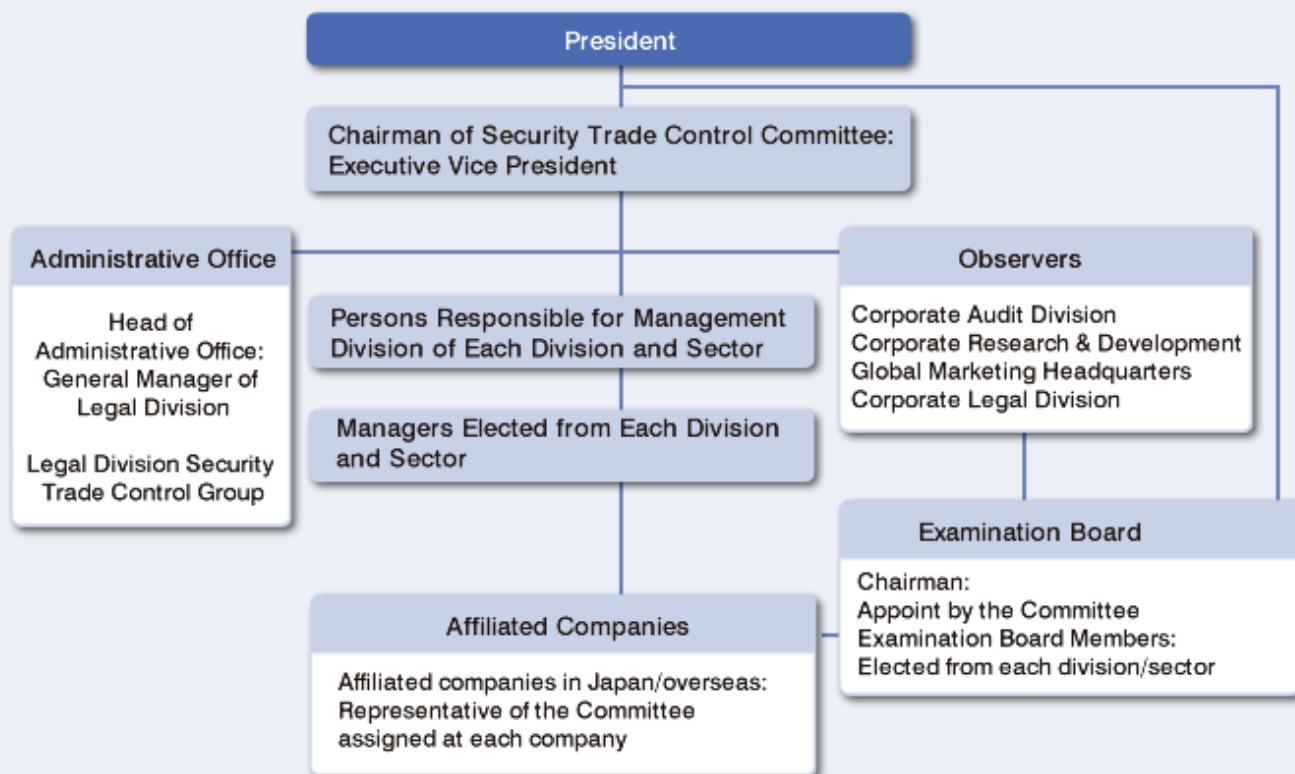
## Security Trade Control Compliance

Against a background of regional conflicts and terrorist acts around the globe, security trade controls have never been more important. With compliance with Japan's Foreign Exchange and Foreign Trade Act and risk management in mind, the IHI Group has deployed measures on a global scale that touch all its divisions, and established a Group-wide Security Trade Control Committee. The Committee is comprised of a chairman (a representative director), the head of the administrative office (member of the Legal Division), a member of the examination board, and representatives from various business departments. The Committee conducts security trade control compliance investigations, self-audits, and monitoring, as well as various information sharing and educational activities relating to security trade control issues. No trade control violation occurred during the 2012 fiscal year.

## Security Trade Control Committee

### IHI Security Trade Control System

A Group-Wide Committee has been established based on internal Security Trade Control Regulations and Security Trade Control Committee Regulations.



IHI significantly revised its internal regulations relating to security trade control to reflect amendments to law. Furthermore, IHI revised its internal regulations with an eye to simplification and emphasis on key points in accordance with the Japanese Ministry of Economy, Trade and Industry's model compliance program. In addition, IHI revised its transaction screening sheets, management methods, and worked to streamline administrative tasks.

## Risk Management

### Fundamental Policies

The IHI Group manages risk in accord with its Basic Code of Conduct. The CEO is responsible for creating and operating risk management systems, and holds a meeting of the Risk Management Committee annually. Based on its discussions, the Committee identifies and analyzes the risks integral to the entire IHI Group and sets out those that should be managed on a priority basis as Risk Management Activity Priority Policies for the coming year. In line with the priority policies, IHI's business units and affiliated companies, including those overseas, determine their risk management plans in conjunction with their respective annual business plans, in order to carry out risk management tasks effectively.

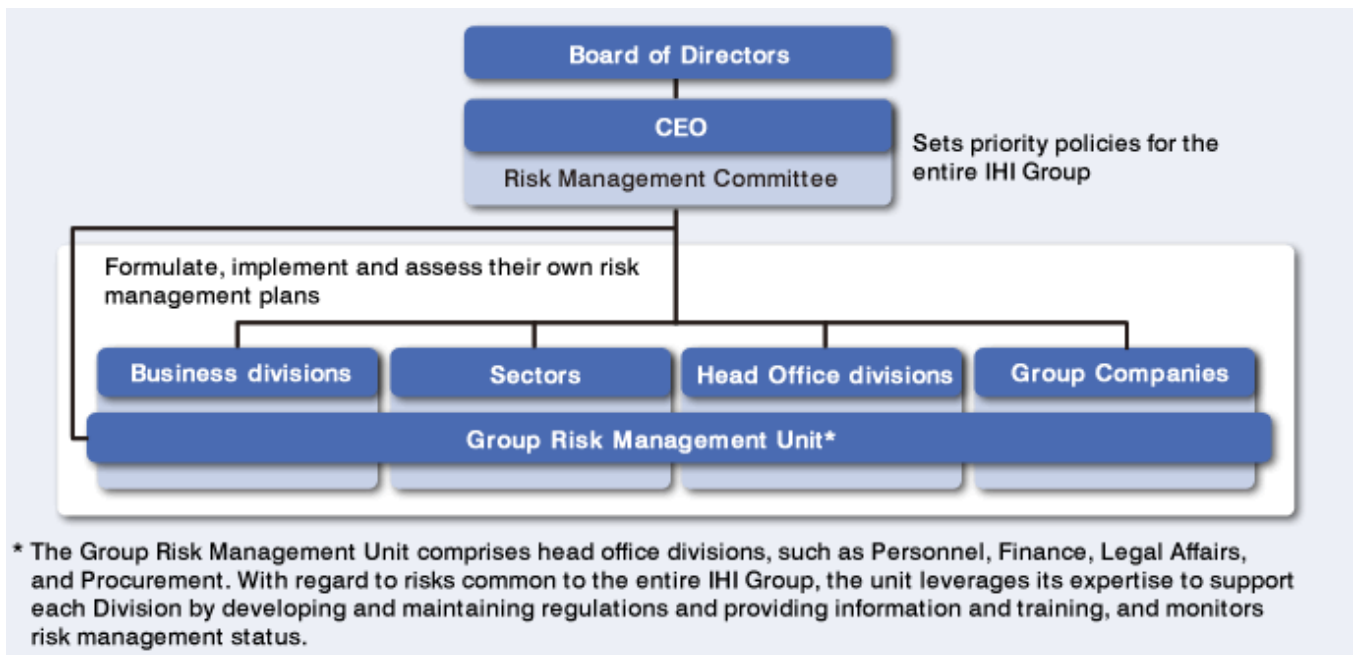
FY2012 Risk Management Activity Priority Policies included the following priorities: broadening scope and diversity of risks due to globalization, changing business conditions caused by events such as natural disasters or nuclear accidents.

### Risk Management System

Furthermore, the Group Risk Management Unit, which mainly comprises IHI head office divisions, leverages its expertise to provide information and training. This unit also assists in risk management tasks of divisions and affiliated companies, monitors the status of activities, and advances the risk management activities of the entire Group in a unified and effective way. Moreover, the Internal Auditors' Office efficiently and effectively performs internal audits of every division and affiliated company based on their respective management plans.

By reviewing our policies and plans based on the results of the above efforts, we will continuously improve and enhance our risk management each year.

## Risk Management System



## BCP Formulation

Since 2008 the IHI Group has formulated business continuity plans (BCP) to respond to emergencies such as major disasters and influenza pandemics. In the aftermath of the March 2011 Great East Japan Earthquake, however, the IHI Group Basic Regulations for Serious Disaster Countermeasures were established to formulate readiness measures and emergency responses for large-scale earthquakes in Japan measuring 6-lower or higher on the Japanese seismic intensity scale. Having established the following basic policy as a response in the event of a severe disaster occurs, we are planning to make further enhancements to the BCP.

- (1) Safeguard the lives and ensure the safety of employees and their families, dispatched staff, assistants, and visitors as the top priority
- (2) Safeguard company-owned assets, such as buildings and machinery, and work to ensure the continuity of operations
- (3) Work toward the early resumption of operations and support the restoration of social infrastructure
- (4) With regard to workplaces and worksites, provide as much support as possible to ensure the safety of local residents and provide relief assistance, etc.

Following this basic policy, a number of reviews are carried out at every business division in May each year, designated “BCP review month,” including reviews to update the BCP emergency call-tree and to secure emergency supplies. In addition, the IHI Group continuously verifies the BCP through regular drills, working to raise the awareness of every employee.



## Topic Responses to the Latest Risks

To prepare for risks such as disruption of the supply chain, networks between procurement divisions and overseas procurement bases were utilized to draw up a system capable of rapidly sharing and acting upon emergency procedures information. As a result, a rapid response was possible when a global shortage of helium occurred.

Progress was made with responses to risks related to the leak, theft, loss or destruction of information assets due to emergencies such as targeted cyber attacks. These responses consistently worked well, with no critical information leakage or similar damage incurred.

From the perspective of environmental preservation, progress was made with soil surveys undertaken at IHI Group production bases and surveys of all bases were completed.

## Maintaining and Improving Information Security

### Purpose of Information Security

IHI has established an information security policy and works to appropriately manage information and maintain and improve information security in order to fully protect the confidential information of its customers and business partners as well as the Company's management information and technical data.

### Information Security Measures

IHI has implemented measures to address information security risks from three aspects: rules, tools, and education.

We have established rules including an Information Security Policy, Information Security Standards, and Information System User Regulations. We have introduced a variety of security tools, such as antivirus software, which we update to the latest versions as appropriate. In order to enhance security outside the Company, we installed security software for e-mails, USB memory sticks, and other external memory devices across the IHI Group. Aiming to maintain and raise security awareness, we hold annual e-learning sessions designed to enhance employees' understanding of these rules and tools.

Computer virus infections caused by targeted e-mail attacks made headlines in 2011, but the IHI Group has long collaborated with government agencies and specialist companies to institute a raft of countermeasures to such attacks. As of March 2013, no damage from leaked information had been identified.

### Organized and Planned Security Measures and Improvements

An Information Security Committee composed of representatives from IHI's major divisions and group companies meets quarterly and implements plans, operations, and inspections on a yearly cycle. Every year since FY2005, the IHI Group has conducted an internal audit of the status of its information security measures and provided guidance for improvement. A primary written survey of all 55 group companies was conducted in FY2012, followed by a secondary interview survey of a selected smaller group of five companies. The audit found no major flaws in security measures.

## Obtaining International Certification (ISO 27001)

The IHI Group divisions and companies that perform important work for the national government undergo annual review and renewal of their international certification of information security (ISO 27001) by outside expert organizations, and strive to maintain a high level of information security.

### Topic Enhanced Information System Resilience

The Great East Japan Earthquake highlighted the importance of having a Business Continuity Plan (BCP) in place, and IHI implemented measures including redundancy in information system facilities, development of operational manuals, and training sessions on restoring operations. The Company also installed the latest technologies for applications such as data storage, remote operation, and cloud services.

## Protecting Intellectual Property

### Fundamental Policies

The IHI Group is enhancing its intellectual property (IP) activities on the basis of business and R&D strategies and constructing a Group-wide IP management system. IHI's basic principle is to rigorously protect its IP while respecting the IP rights of third parties.

### IP Protection Activities and Respecting the IP Rights of Third Parties

In FY2006, the number of patent applications filed by the IHI Group in Japan stood at 511, but in protecting the IHI Group's IP the number has increased to around 1,000 applications annually in recent years. Introducing a Group-wide system capable of searching for patents and monitoring other companies' patents has reduced business risks with respect to third-party IP rights by creating the infrastructure environment necessary to avoid business risks.

### IP Education

The IHI Group employs a five-step e-learning program over employees' first five years with the Company, offers training courses on IP, and conducts a range of educational programs related to IP in general, covering matters including patents, copyrights, brands, and trade secrets.

In December 2012, we welcomed as lecturer former Kao Corporation director Tetsuya Imamura, who delivered lectures on human resources that generate innovation and the importance of IP.

#### Topic Widespread Understanding of the Importance of IP Activities

We issued a white paper on IP and reports by business division, implemented a number of activities including an IP quiz and crossword timed for Intellectual Property Month in October, and worked to encourage widespread understanding of the importance of IP activities within the IHI Group.





# Social Responsibility Report

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Social Responsibility Report

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# Our Customers

## Fundamental policies

Through its business activities, the IHI Group aims to satisfy customers and gain their trust by proactively developing and supplying safe, useful products and services that contribute to society.

## Quality Assurance

### Company-Wide Efforts to Improve Quality

Meetings of the IHI Quality Committee, which includes representation from Group Companies, are held twice a year. Priority issues for FY2012 were preventing the occurrence or recurrence of quality problems, managing quality in the procurement process, and ensuring product safety.

To prevent the occurrence or recurrence of quality problems, we examined data on defects occurring during projects and worked closely with business divisions to analyze causes and consider countermeasures. To ensure and improve quality in the procurement process, we enhanced both systems and skills by accurately identifying suppliers' technical and quality management capabilities, providing appropriate and specific instructions, and identifying and dealing with changes in a timely manner. To ensure product safety, we conducted risk assessments at the development stage considering the entire product life cycle, and for existing products we confirmed that environmental changes and technological advances were appropriately reflected.

Business divisions undertake specific activities to manage quality. The Quality Committee checks progress and issues relating to priority measures taken by divisions. The IHI Group utilizes a plan-do-check-act (PDCA) cycle to improve quality management, including improvement and dissemination of necessary technologies. To maintain and enhance the quality of procurement processes, we have established a Procurement Quality Liaison Committee, through which know-how is shared by all business divisions throughout the organization.

### Quality Management Systems

IHI Group divisions carry out their work in accordance with quality management systems including ISO9001. Management system certification bodies conduct annual monitoring, and systems and work practices are continually improved. Corporate Research & Development and the Information Systems Division have also obtained ISO9001 certification, and these systems are applied to quality management when testing the performance of large products including bridges, and when developing new products as well as software for in-house use. Group companies also actively pursue similar standards of quality: The Group's 37 affiliated companies and divisions in Japan and 19 overseas affiliates providing ongoing local design,

manufacturing, and service operations have obtained quality certifications including ISO9001. In FY2012 there were no instances of IHI Group products or services seriously infringing or failing to comply with regulations.

## Customer Satisfaction

### Training to Enhance Customer Satisfaction

The IHI Group conducts training to enhance product quality management, customer satisfaction, and product safety. In addition to company-wide position-level-specific training, business divisions carry out their own ongoing training programs.

Recruit carried out in April each year includes etiquette and product quality courses featuring theoretical and practical elements to instill a customer-oriented approach in new employees right from the beginning of their careers. In FY2012, 213 employees participated in this training. Courses for engineers in their third and fifth years with IHI are also conducted on an ongoing basis. Focusing on the importance of product quality assurance, engineering ethics, intellectual property, and product safety, this group training includes a comprehensive program of lectures and class discussions based around examples provided by highly experienced engineers. A course for engineers at group companies was also trialed in FY2012, and we are now preparing to offer this new course from FY2013. In addition, each division conducts its own training on product quality assurance and product quality management as well as e-learning programs as required.

Six courses related to product quality and product safety were offered a total of 13 times in FY2012, with approximately 350 employees taking part.

### Topic Top UTC Supplier in Asia

IHI's Kure No. 2 Aero-Engine Works received a Supplier Gold Award and a Performance Recognition Award from Pratt & Whitney (P&W), a subsidiary of United Technology Corporation (UTC), for its work on jet engine shafts. These awards are presented to suppliers achieving extremely high levels of performance in areas including on-time delivery, quality, improvements, and communication.

Representatives of P&W visited Kure No. 2 Aero-Engine Works for an award ceremony in April 2012, and assessed IHI as their top supplier in Asia.

We are proud that this feedback results from united efforts to enhance customer satisfaction. The works will continue to involve all employees in fast-moving, proactive efforts to achieve standards of manufacturing that impress customers and co-workers alike.



Operation of Paper Machine N2 and Coating Machine 2 at Nippon Paper Industries' Ishinomaki Mill, which was severely damaged by the tsunami following the Great East Japan Earthquake in 2011, resumed on August 30, 2012. These were the final paper and coating machines to re-start, completing the restoration of the Ishinomaki Mill just one year and five months after the disaster.

In the restoration project IHI and Voith IHI Paper Technology Co., Ltd. utilized every available aspect of their technologies and experience and spared no effort in rebuilding facilities including boilers and machinery. All those involved in the reconstruction celebrated completion of the project at a ceremony held at the Ishinomaki Mill, where the IHI Group was presented with a certificate of appreciation for its efforts. We will continue pooling IHI Group technologies to help our customers develop their businesses.



Certificate of Appreciation Received from Nippon Paper Industries' Ishinomaki Mill

## Ensuring the Safety of Products and Machinery

### Safety Assessment

The IHI Group is working to enhance the safety of its products.

At the development stage we conduct risk assessments considering product usage and life cycles, take design measures to reduce risk as much as possible, and provide customers with information on any residual risks. When designs are altered, we conduct further risk assessments on points of change.

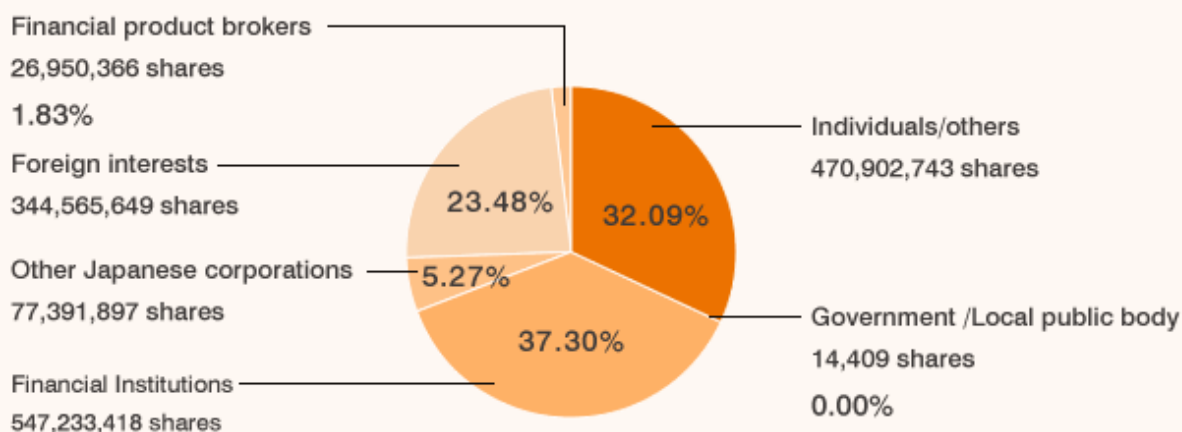
In terms of the products with the long history, while approaches to ensure safety have been reflected to the products, a clear safety verification record does not always exist. For this reason, we reviewed risk assessments of existing products, especially used by the general public such as mechanical parking device, to confirm that safety of products and machinery is considered. Based on the results of these reviews, we adopt a user perspective and constantly strive to make products safer for our customers, for example by revising user manuals and warning labels. We plan to apply these efforts to other parking device and machinery.

## Our Shareholders and Investors

### Fundamental Policies

To promote mutual understanding with stakeholders, the IHI Group provides information on its business activities and their impact on others, and strives to exchange views with stakeholders on a day-to-day basis. The Group aims not only to provide information on a timely and appropriate basis, but also to respond promptly to stakeholder inquiries in order to maintain good community relations and build relationships of trust. It will continue to share information with the media and other external organizations and constantly gather data on global trends to facilitate smooth and appropriate responses as required.

### Shareholder Composition

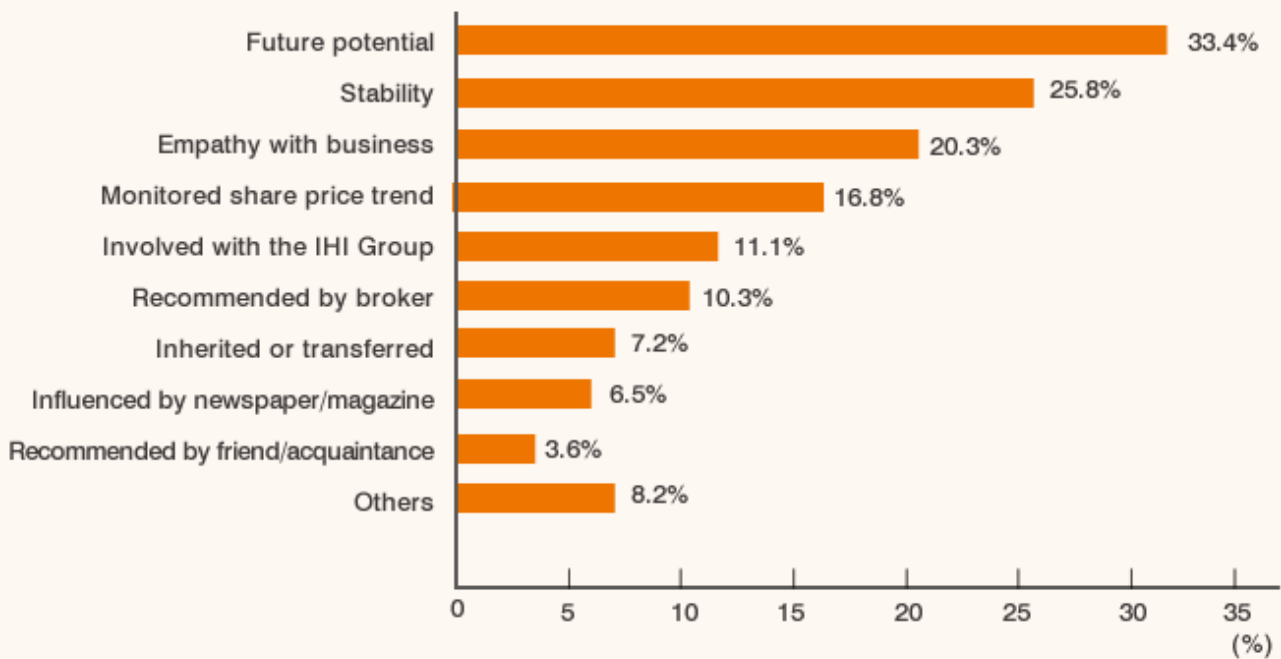


### Voice Improving Communication

IHI conducted a survey of all shareholders as of September 30, 2012 to canvass their views and requests so that they can be reflected in future management and IR activities. We received 9,641 replies (a response rate of 9.3%).

Based on the opinions and requests received, we intend to communicate even more closely with shareholders by improving information contained in the IHI Report and on our website relating to management policies, strategies, and business activities.

Reasons for Purchasing or Holding Shares (multiple answers permitted)



What Shareholder Communication Initiatives Do You Hope to See? (multiple answers permitted)



## Dividends

FY2012	FY2011	FY2010	FY2009	FY2008
5 yen/share	4 yen/share	3 yen/share	2 yen/share	0 yen/share

## IR Information

The company publishes an IHI Report in Japanese and English and an Annual Report in English and discloses accurate financial information to ensure timely and appropriate communication with shareholders and investors. Briefings for analysts and institutional investors are held when interim and full-year financial results are announced.



### Topic Communication with Overseas Investors

In response to a rise in the number of overseas shareholders, the company promotes greater understanding of IHI's business activities on the part of overseas investors by providing enhanced communication opportunities. These include visits to overseas investors and participation in investor conferences and interviews.

In FY2012, just as last fiscal year, IHI managers again visited North America, Europe, and Asia to provide opportunities for direct communication with local institutional investors. In addition to the previous North American destinations of New York, Boston, and San Francisco, managers visited Canada and cities in the US Midwest, providing the first chance for communication with investors in these areas who are interested in IHI. Feedback from investors visited indicated that the meetings were highly valuable, conveyed a good impression of IHI, and provided a better understanding of the current circumstances and future prospects of IHI's main businesses. Investors appreciated top management sparing time for the visits.

## Our Business Partners

### Fundamental Procurement Policies

The IHI Group regards suppliers of goods and services as key partners and aims to prosper hand-in-hand with them.

The IHI Group bases its procurement activities on a fundamental policy that promotes compliance with laws and regulations and meets to social requirements. Through fair and impartial evaluation and selection of suppliers, our procurement activities aim to boost the competitiveness and prosperity of both the IHI Group and its partners.

### Promoting Corporate Social Responsibility in Procurement

In December 2012, the IHI Group established a Basic Procurement Policy. This policy has been publicized within and outside IHI Group to promote fair trading and socially responsible practices in all procurement activities.

The three pillars of the policy are fair and impartial procurements, mutually beneficial partnerships with our business partners, and approach to compliance and social needs. We also ask for the cooperation and understanding of our business partners with regard to the promotion of following values: compliance ; paying attention to human rights, labor conditions, and occupational safety and health; ensuring optimal quality, cost and delivery conditions ; enhancement of competitiveness; respect for the environment; and information disclosure.

After the policy was established, IHI Procurement Strategic Department sent it to our business partners, and group companies of IHI informed their business partners and conducted seminars to publicize the IHI Group's procurement philosophy.

[IHI Group Basic Procurement Policy](#)

### Contributing to Society Through Fair and Appropriate Trade

The IHI Group strives to contribute to society by conducting fair and appropriate trade. In the interest of providing products and services in response to social demands, after properly evaluating technology, quality, and price, we offer advice to business partners on technical and managerial aspects when needed. In conducting global procurement activities centered on procurement bases in each region, we adhere to international standards and rules in order to comply with import/export regulations and meet social needs relating to the environment, labor conditions, and occupational safety and health.



## Training and Inspection Regarding Procurement-Related Legislation

To enhance compliance, the IHI Group conducts training and internal checks related to procurement-related laws, including the Act Against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors (Subcontractors Act) and the Construction Business Act. We conduct internal training courses aimed at ensuring compliance with procurement-related law and have opened these courses to all divisions deemed to require an understanding of Acts as above. Such efforts have promoted understanding of these laws and raised awareness of appropriate work procedures throughout the IHI Group. In FY2012, 141 employees attended the Subcontractors Act course, and 96 took part in the Construction Business Act course.

To comply with overseas procurement-related legislation, we promote appropriate and standardized import declaration by voluntarily inspection for post-clearance audits of all relevant IHI divisions.

The IHI Group conducts internal audits of procurement divisions' compliance with the Subcontractors Act and offers guidance as required. From FY2012, we encouraged voluntary inspection and rigorous efforts to make improvements.

## Handling to Anti-social Forces

The IHI Group sternly rejects involvement with anti-social forces in its procurement activities, and we clearly stipulate to our business partners that the absence of relationships with anti-social forces is one of trade terms. With the enforcement of the Organized Crime Exclusion Ordinance, we are working even more resolutely to eliminate anti-social forces.

## Awards for Overseas Partners

In order to build stronger relationships with our business partners, IHI has instituted an award system for business partners who have made a major contribution to improving prices, delivery times, and quality.

For example, IHI presented a certificate of appreciation to Unison Co., Ltd. for its support in enhancing competitiveness through stable, trouble-free delivery of high-quality forged parts for shield tunneling machines. We will continue to bolster our cooperation with Unison as a key partner.



## Efforts to Build Stronger Relationships with Business Partners

The IHI Group makes efforts to improve procurement activities by sharing information and policies with business partners. Through initiatives such as value engineering activities\*, we will strive to build solid cooperative relationships in order to further strengthen partnerships and promote mutual prosperity.

\*Value Engineering is a professionally applied, function-oriented, systematic team approach used to analyze and improve value in a product, facility design, system or service. It increases customer satisfaction and adds value to the investment. It can be applied to any business and is a very successful long-term business strategy.

### Voice Birla Precision: Working Together to Improve Quality and Technology Levels

Birla Precision (formerly Birla Accucast Ltd.) is proud to be associated with a highly reputed company like IHI. We supply turbine housing castings from our Aurangabad works in India for IHI Turbocharger Thailand. We are the first (and the only Indian casting company so far) to pass various stages of IHI's rigorous evaluation process and quality requirements.

IHI is one of the few clients, to motivate suppliers from time to time. We received a "certificate of appreciation" for our performance in uninterrupted supply of castings.

During the course of work, IHI maintains active communication with various levels of our staff to ensure quality, and delivery and address other operational issues. Management meetings are also held annually between IHI and Birla to smoothly resolve any major issues. Association with IHI, has boosted our quality, and professionalism to the next level.

Birla management and staff enjoy working with IHI, because the company consistently values our input to continuous improvement.

We sincerely hope that the positive energy existing in our business with IHI will grow further in a truly long lasting relationship.



Presenting the certificate of appreciation to Birla Precision

# Our Employees

## Fundamental Policies

The IHI Group strives to create safe, pleasant work environments where people respect each others' characters and individuality, and to enable our employees to enjoy comfortable and affluent lives. Based on the concept of a diverse workforce, in recent years IHI Group has made particular efforts to actively recruit and promote capable people in all regions, regardless of gender, academic qualifications, age, or nationality. The Group fully recognizes the importance of human rights and makes every effort to always respect such rights in the course of its business activities. Through such efforts, we enhance the unity of the IHI Group and the skills and vigor of individual employees and further encourage a free and open corporate climate.

## Respect for Human Rights

### Awareness-Raising Activities

#### ■ Dowa Issue

The Dowa issue is a human rights problem unique in Japan. Discrimination shaped in the course of the historical development of Japanese society forced some Japanese people to accept a lower status economically, socially and culturally. They are subject to various kinds of discrimination in their daily lives even today.

(Source: 2013 White Paper on Human Rights Education and Awareness, Ministry of Justice and Ministry of Education, Culture, Sports, Science and Technology)

IHI is addressing human rights issues based on the corporate philosophy "Human resources are our only and largest asset." IHI's human rights awareness activities began in 1981, with the establishment of a company-wide Dowa Promotion Committee. Recognizing our corporate social responsibilities, we then formulated a basic policy of actively seeking to resolve the Dowa issue in the aim of creating a fair, non-discriminatory society as a key aspect of our business activities.

Based on plans and policies drawn up by the company-wide committee, each worksite has since established a local Dowa Promotion Committee. In light of domestic and international human rights trends and changes in the social environment, these committees have undertaken specific human rights education and awareness activities addressing a wide range of human rights issues relevant to each workplace, including the Dowa issue.

Outside Japan, key human rights issues include child labor and forced labor. We thus believe it is also important to deal with human rights issues from a global perspective. In this context, we amended the Basic

Code of Conduct for the IHI Group in 2010 to list respect for human rights as a fundamental principle, and we will continue our Group-wide human rights initiatives.

In FY2012, a total of 4,572 employees took part in internal training programs, and external seminars.

These awareness-raising activities are reported to top management to constantly reaffirm their importance to the entire company. No instances of human rights issues, child labor, or forced labor were reported.

## Equal Wages According to Gender for Overseas Recruits

The IHI Group practices fair and impartial wage-setting both in Japan and overseas. At IHI Turbo (Thailand) Co., Ltd. (ITT), for example, operators' wages are set at 9,000 baht per month for men and women alike.

## Respect for Diversity

### Enhanced Systems for New Graduate Recruitment

In order to recruit a diverse workforce, IHI recruits regardless of nationality, gender, or age. We also recruit graduates up to three years after graduation.

To employ a diverse workforce capable of playing roles in our global operations, the IHI Group has provided a broad range of recruitment opportunities, including recruitment seminars in the US, UK, South Korea, and Singapore. Figures for recruitment of non-Japanese employees over the past five years are: 15 in 2009, 7 in 2010, 8 in 2011, 15 in 2012, and 13 in 2013.

#### New Graduate Recruitment in FY2013

Engineers	152 (including 10 female engineers)
Administrative workers	47 (including 17 female workers)
Japanese graduates of overseas universities	2 (including one female graduate)
Non-Japanese	13 (including 5 female workers)
<b>Total</b>	<b>214</b>

### Active Recruitment of Career Employees

IHI actively recruits career employees. In FY2012, 34 career employees joined the company. We conduct an annual symposium to inform career recruits about company systems and build internal networks. We have also introduced a system of fixed-term employment contracts as a mechanism for appointing temporary employees to the regular staff. Under this system, six-month employment contracts can be renewed up to a maximum of three years, and employees who meet certain standards can be hired as the regular staff. In FY2012, 15 appointments were made under this system.

## Employment of Persons with Disabilities

To create workplaces where anyone can work with ease, IHI encourages the employment of persons with disabilities. As of December 2012, 1.8% of IHI employees were persons with disabilities. We will continue to cooperate with public employment agencies to actively provide employment opportunities for workers with disabilities.

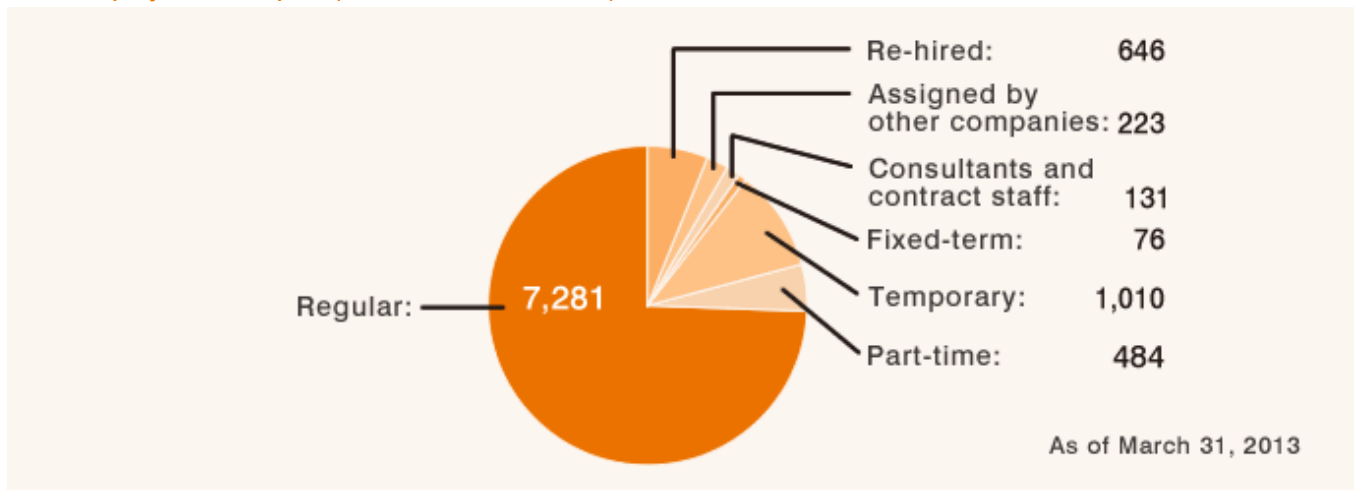
## Employment of Persons Aged 60 and Over

More than 90% of companies in Japan have a specified retirement age, which is generally set at 60.

(Source: General Survey on Working Conditions, Ministry of Health, Labour and Welfare 2012)

In April 2013, IHI replaced its previous re-employment system with a scheme giving employees the option of working for a further five years. As well as complying with law changes related to employment of older persons, by enabling employees to choose their own retirement ages, this scheme aims to create an environment where people can continue to work actively beyond the age of 60.

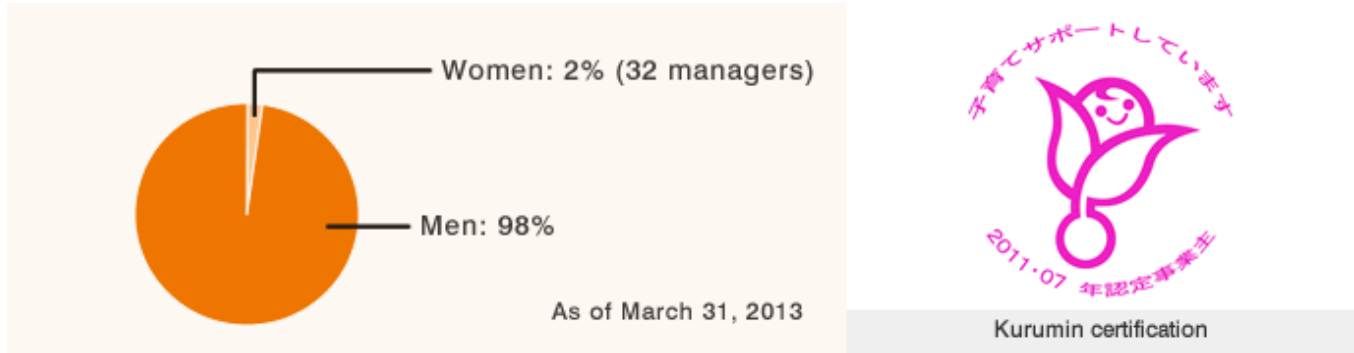
### ■ IHI Employees in Japan (as of March 31, 2013)



## Recruitment and Promotion of Female Workers

IHI encourages recruitment of female workers. In FY2013 we recruited 13 new female graduates as engineering workers (16 in FY2012) and 20 as administrative workers (20 in FY2012). Basic salaries do not vary according to gender. IHI originally obtained “Kurumin” certification under the Act on Advancement of Measures to Support Raising Next-Generation Children in 2007. Also in FY2012 we obtained this certification which is only granted to companies complying with childcare support standards.

## ■ Percentage of Women Managers



## ■ Creating Pleasant Workplaces

### Employee Health Management

In the belief that creating satisfying and fulfilling work environments boosts individual productivity and vitalizes workplaces, the IHI Group places special emphasis on health management.

We also continually address other health issues including metabolic syndrome, unhealthy lifestyles, and smoking.

### Employee Attitude Surveys

Annual employee attitude surveys have been conducted since 2004 as part of efforts to canvass employees' opinions and examine our organizational culture. Survey results are used to provide feedback to the entire company, including employees. They are also used to provide a picture of workplace conditions and identify issues for each division, and to develop divisional policies and improve the workplace climate.

### Rigorous Health and Safety Management and Eradication of Work Accidents

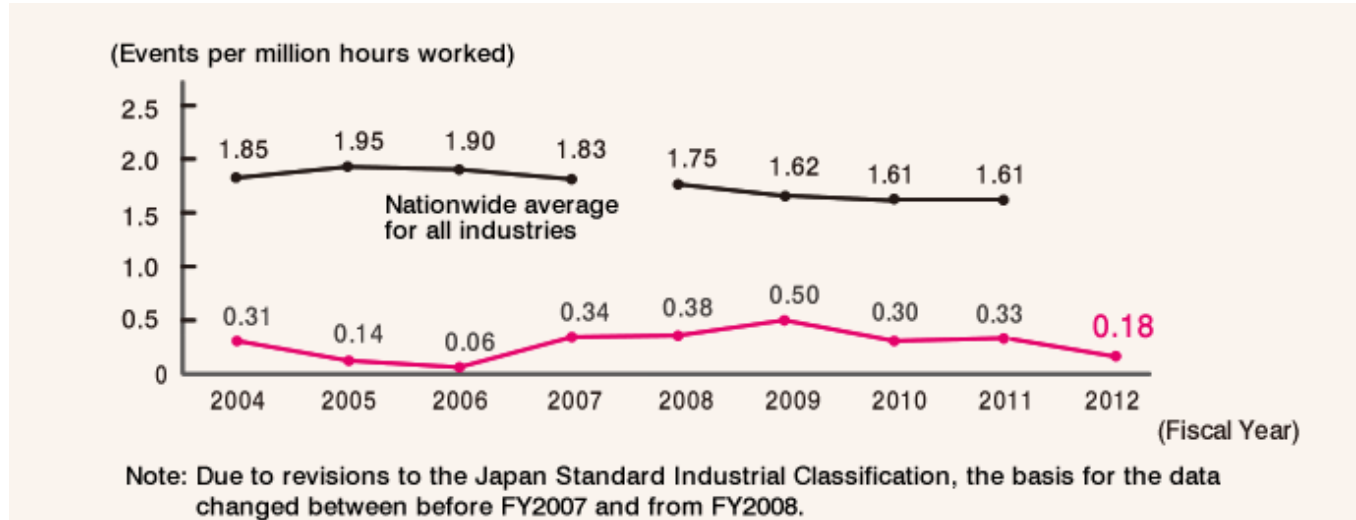
The IHI Group encourages all employees to follow five fundamental safety principles and works to eradicate work accidents. The company strives to prevent accidents in its works and construction sites by implementing strict safety measures for tasks, working conditions, and environments

identified as high-risk through the analysis of past accidents. At a monthly meeting of the Labor-Management Health and Safety Committee, which is comprised of plant, worker and management representatives discuss safety management and priority issues to encourage the creation of safe workplaces, and regular safety training for supervisors and other employees aims to ensure safety in daily work.

#### Safety 5 Principles

- Give first priority to safety over everything
- Don't do or make others do dangerous work
- Take measures to prevent accidents in advance
- Observe safety regulations
- Our own efforts prevent accidents

■ Total number of Lost Time Injury Events



Promoting Healthy Work-Life Balance

IHI is enhancing systems to support work-life balance in order to create environments where all employees can work with ease while achieving a better balance between their work and home lives.

Following discussion between workers and management in FY2010, childcare and elderly nursing care leave systems were extended to grant employees 10 days leave per year to care for sick children regardless of number of children and 10 days elderly nursing care leave per year regardless of number of people being nursed.

Childcare systems were well-used in FY2012, with 101 employees taking childcare leave and 130 utilizing the reduced working hours scheme designed for employees with children of elementary school age or younger. A system granting a total of 20 days for childcare leave to employees with preschool children was introduced in FY2008, and 406 people used this system in FY2012, including a growing number of male employees.

In FY2012 seven employees used the elderly nursing care leave system.

■ Employees Taking Childcare Leave and Percentage Returning to Work\*

FY2009	68 (91% returned to work)
FY2010	73 (94% returned to work)
FY2011	81 (100% returned to work)
FY2012	101 (95% returned to work)

\*The following formula is used to calculate the percentage of employees returning to work after childcare leave:

$$\frac{\text{Number of employees returning to work after childcare leave in the year (excluding those who resign immediately after childcare leave)}}{\text{Number of employees planning to return to work after childcare leave in the year}} \times 100$$

(rounded to the nearest whole number)

## Labor Relations Partnership

Labor and management cooperate to create a comfortable working environment. For example, various labor relations councils are convened in accordance with labor agreements, including workers' councils to swiftly resolve day-to-day issues, management councils to discuss management policies and financial results, and production councils to maintain and improve productivity in works divisions.

### ■ Labor Union Membership

Region	Membership	Region	Membership
Tokyo	1,399	Yokohama	1,407
Musashi	1,583	Nagoya	485
Soma	840	Aioi	565
Tomioka	641	Kure	506
		<b>Total</b>	<b>7,426</b>

As of March 1, 2013

## Leisurely Holidays Initiative

In FY2009, IHI introduced a leave scheme called the "Annual Restful Holiday Promotion" to encourage employees to take annual leave in a planned manner. Many employees actively use the system.

## Reduction of Overtime Work

Each year IHI formulates a working hours management policy to promote a healthy work-life balance. The policy aims to limit non-essential overtime by promoting efficient work practices during regular hours and distributing tasks evenly among employees. PC log-on/log-off times are monitored, and if these records diverge from reported start and finish times the situation is checked and appropriate guidance is offered. To reduce overtime, one day a week is designated as a "no overtime day".



The IHI Group strives to create a working environment where a diverse workforce can empathize with its management philosophy and fully exercise their abilities. In FY2012 a training course for female managers was held to raise the awareness of women in management positions and provide them with networking opportunities.

Training currently focuses on enhancing the skills of female managers so that they can be promoted to the department manager position and providing career role models for younger female employees.

A dedicated diversity unit has been established in the Human Resources Division to further enhance systems to support all employees in playing active roles, regardless of gender. Such initiatives are proactively publicized on the Ministry of Health, Labour and Welfare's "Positive Action Information Portal Site" to encourage women to play more active roles at work.



Participants in a training course for female managers

## Human Resource Development

### Human Resource Development Initiatives

IHI has established educational and training programs to help employees acquire skills necessary for their work. These include company-wide programs for specific levels of employees, including new recruits and those newly appointed to management positions, and programs specific to certain sectors or divisions. Employees can also choose from more than 300 open lecture courses to brush up technical, practical, and language skills. Moreover, special training systems offer opportunities for management and leadership courses, training at external organizations, and further study in Japan and abroad.

Appraisal systems provide another human resource development tool by providing all employees with feedback on their assessments, indicating strengths and points for improvement. The systems are contributing to the further development of individual abilities.

In FY2012 employee education was enhanced in areas including training for female managers, special training and engineer development course for group company managers, and educational program for new international recruits.

As part of implementing "Group Management Policies 2013," from FY2013 training will be further enhanced in areas such as developing global human resources, building stronger interpersonal ties, and instilling employees with the IHI Group philosophy.

## Passing on Skills

Each of IHI's works is in charge of specific manufacturing skills, and it is essential to pass on core skills such as welding and machine work. Employees who possess highly specialized skills in particular fields and train the next generation of workers are designated as *takumi* (master artisans), and in FY2007 a *takumi* certification system was introduced to systematically pass on such skills. In FY2013, 50 employees were certified as *takumi*.

### ■ Number of Employees Certified as *Takumi*

Welding	6
Assembly	6
Machine work	16
Testing/Inspection	8
Maintenance	3
Others	11
Total	<b>50</b>



Badge provided to certified *takumi*

# The HR Development System

Position level Content	S3 level	S2 level	S1 level	E level (Assistant section managers)	Section managers	Division managers	Plant and operating group managers	
<b>Goals of training</b>	Basic training	Development and consolidation of practical business skills				Cultivation of operational skills, a management-oriented viewpoint, and insight		
		First steps in developing a specialty	Consolidation of the specialty		Gaining deeper knowledge of the specialty			
		Acquisition of basic managerial skills			Improvement of managerial skills and skills in organizational innovation			
<b>Educational and training activities</b>	<b>Position level-specific training</b>	Training for new employees	Training for mid-level employees	Training for new S1 level employees	Training for new E level employees	Training for newly appointed selection managers	Training for newly appointed division managers	
		Training for engineers (in the 3rd and 5th year of experience)						
	<b>IHI open lecture courses</b>	Technical courses (Basic technology, control mechatronics technology, quality-related technology, defect and design technology)						
		Practical business courses (export business, materials procurement)						
		Business skill courses (communication, presentation, PC courses, etc.)						
							Management skill courses (leadership, coaching, EM methods, etc.)	
		Foreign language courses (English, Chinese)						
	<b>Education by division</b>	HR training systems by operation and division						
		Self-study and on-the-job training for each division (education in the workplace)						
	<b>Specialized training</b>	Study programs for employees assigned or sent to external organizations, and universities and graduate schools in Japan and overseas						
<b>Selective training</b>					Selective training for E level employees	Selective training for section managers	Selective specialized training for division managers	
					Management of technology courses, project management courses			
<b>HR Mgmt. Systems</b>	<b>Salary increase and promotion system</b>	System of salary increase and promotion based on job function grade				System of salary increase and promotion based on job function ranking		
	<b>Transfers and assignment</b>	Transfers for the purposes of training (rotation among divisions) or appropriate assignment				Transfers for the purposes of strengthening the organization or appropriate assignment		
		Provision of career formation opportunities with voluntary application system, open internal recruitment system, and in-company FA system						

## ■ Participants in Main Training Courses and Total Training Hours

	Approx. Participants	Approx. Training Hours
Position-level-specific	1,300	85,000
Open lecture courses	8,000	75,000

### Topic Global Human Resource Development

To equip employees with the skills needed for global operations, in addition to the existing intensive residential program in India and language skills training for new recruits, in FY2012 some employees were dispatched to short MBA courses for executive managers and training programs with overseas government agencies. Training programs were also offered for the growing number of non-Japanese employees in the IHI Group, to educate them about Japanese society and companies and provide an opportunity to acquire Japanese language skills.

### Topic Group Human Resource Management Policies

The IHI Group has formulated a Group Human Resource Management Policies to share values about human resources management within the Group. Based on these policies, we will improve work environments and structures in which employees are able to maximize their abilities.

Ideal human resources are defined by Group Human Resource Management Policies. Ideal human resources serve as the foundation for recruiting, development, evaluation etc.

#### Ideal human resources

- Integrity and Trust
- For customers and Society
- Innovation and Creation
- Team Work
- World-Class Professional

## For Society

### Fundamental Policies

Recognizing that we are all members of society, the IHI Group proactively works to resolve social issues, striving to understand local cultural values and meet the expectations of local communities as it conducts business around the world.

#### Topic Donations to Childcare Centers and Nursing Homes in Thailand

IHI Turbo (Thailand) Co., Ltd.(ITT), a subsidiary company of IHI Corporation, donated half a million baht to five facilities such as childcare centers and nursing homes for aged people and promoted mutual friendship between ITT employees and people of the facilities from November 20 to November 29, 2012.

ITT, tenth anniversary of establishment, carried out these activities to express its gratitude and philanthropy to the community for having been able to manage a business for ten years.

ITT has carried out the similar activities once a year since 2010, and it is planned to continue in the future.



Children and staff at a childcare center

#### Topic Support for the World Food Programme

Japan Association for the World Food Programme(JAWFP) is the Japan-based nonprofit organization which focuses on building support for the United Nations World Food Programme (WFP) whose mission is to eradicate hunger and poverty. IHI became JAWFP's Council Member in 2010, and has been taking part in JAWFP's activities as part of CSR activities.

In FY2012 about 100 IHI Group employees and family members took part in a charity event "WFP's Walk the

World" in Yokohama. The participants walked around Yokohama to raise awareness of serious food shortages and hunger in Africa and Asia. We will actively continue to support JAWFP.



IHI employees and their families taking part in the "WFP's Walk the World" event

## Topic Guest Teachers for Elementary School Students Lecture

IHI supports an extension lectures for children at Shibaura Institute of Technology, next to the Company's Toyosu headquarters. As part of this program to familiarize elementary school students with science, an IHI employee was dispatched to lead a hands-on session about the power needed for helicopter flight. Some 40 students took part in the lesson, learning about the mechanisms of helicopter flight before making and flying their own model helicopters. A questionnaire survey after the lesson showed that the children had enjoyed making actual models and thanked the teacher for this opportunity. IHI will continue to support local education.



Students during the lecture

## Topic IHI Supports Community Cycle Scheme

The Koto-ku Rinkaibu community cycle scheme is a new service enabling users to share bicycles at any of the stations installed around the Rinkai area of Tokyo (including the districts of Toyosu, Shinonome, Ariake, and Odaiba). Led by local government, the scheme is operated by NTT Docomo and is currently being trialed. Introduction of the service is expected to revitalize the area and reduce CO<sub>2</sub> emissions by reducing automobile traffic. The IHI Group supports the scheme, and IHI Scube Co., Ltd. is supplying all the necessary systems including bicycle sharing equipment and data centers. Through the local urban development council, IHI is also helping to promote widespread use of the scheme.

The IHI Group will continue responding to the needs of local communities in various ways.

<http://kcc.docomo-cycle.jp/en/>



Cycle station in Toyosu

## Topic School Ground Grass Planting Project

The School Ground Grass Planting Project, which lays lawns on the grounds of public elementary and junior high schools in Tokyo, to take countermeasures for the urban heat island phenomenon and improve the various educational effects. Since FY2009, IHI has taken part in a support group for the project, which was launched by the Environment Bureau of the Tokyo Metropolitan Government to assist schools by recruiting corporate partners to help in lawn management works and provision of the necessary equipments.

In FY2012, IHI employees maintained lawns at Komae Dai-go Elementary School and Hachioji Dai-roku Elementary School and provided goods including drinks and sand to support recreation events.

IHI will continue to support this project in a variety of ways, including assistance with lawn mowing.

## Topic Science and Technology Seminars for High School Girls

In cooperation with the Gunma Prefectural Board of Education, IHI Aerospace Co., Ltd. (IA) conducted a science and technology seminar for high school girls at its Tomioka plant. This seminar aimed to encourage high school girls to choose careers in science and technology by giving them the chance to meet women working in the field. Female engineers active on the front lines of science and technology talked about what motivated them to select their way and the attractions of their current work.

Twenty participants from Shibukawa Girls' High School visited rocket manufacturing facilities and took part in discussions with women engineers from IA. Feedback after the seminar showed that participants felt it had given them wider aspirations and that the chance to speak with women actually working in the field of science and technology was valuable in thinking about their own futures.

The IHI Group will continue to create opportunities for female students to aim at careers in engineering.





# Environment Report

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Social Responsibility Report

Environment Report

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# IHI Basic Environmental Policy

## IHI Basic Environmental Policy

### Basic Policy

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Based on Article 7 (Responsibilities toward the global environment) of “Basic Code of Conduct for the IHI Group”, IHI Group companies shall observe the following guidelines while voluntarily and proactively tackling environmental activities.

### Conduct Guidelines

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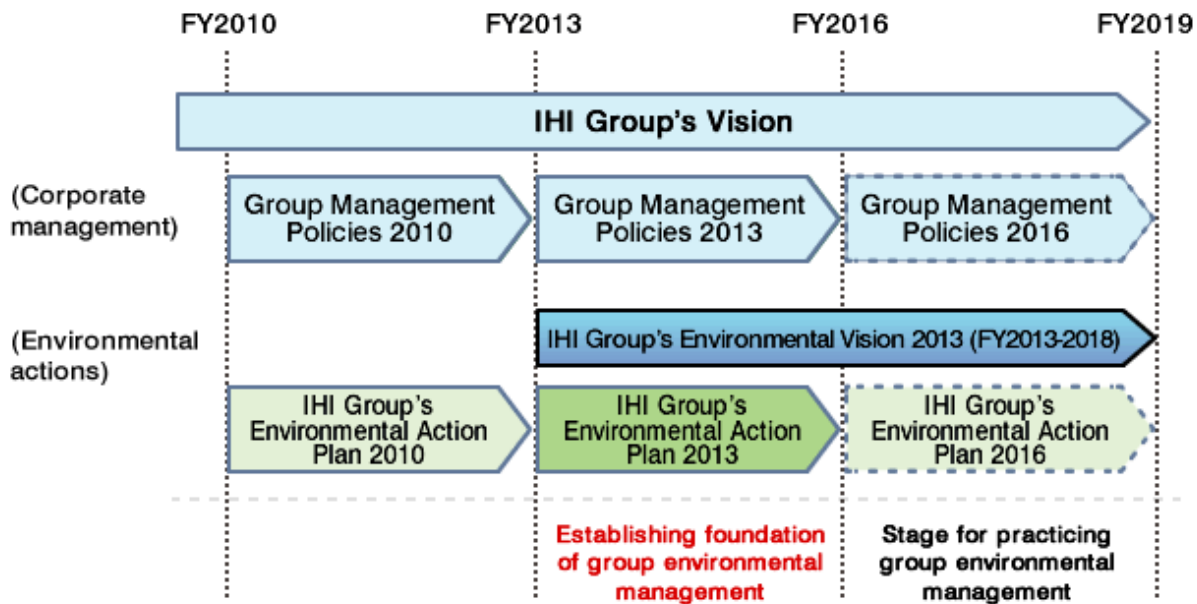
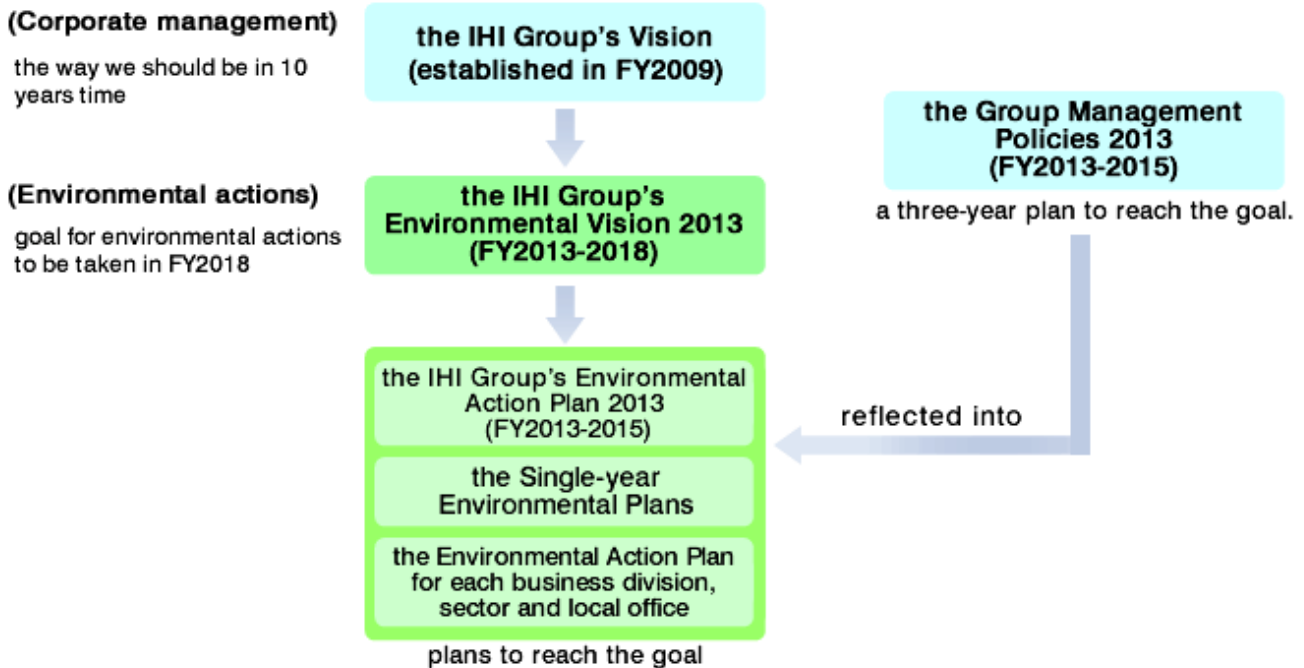
To achieve the objectives of its basic environmental policy, IHI Group companies shall closely observe the following guidelines while aggressively and continuously tackling environmental preservation and improvement through its business activities.

1. Strive to constantly improve environmental management by complying with environmental laws and regulations, ordinances and protocols of the Japanese government and local governments as well as voluntary action plans of relevant industries while establishing and administering IHI's own environmental management standards.
2. Provide society with products and technologies that contribute to the preservation of the global and local environments.
3. Consider the environment throughout entire product lifecycles, from R&D, design, procurement and production to use, servicing and disposal to prevent pollution, save energy and natural resources and minimize waste volume.
4. Raise employees' awareness of environmental preservation through education and training to increase their interest in environmental issues and encouraging them to act accordingly.
5. Participate in social contribution activities in the local communities where IHI operates, thereby strengthening social harmonization with them, helping to preserve local environments and promoting environmental communication.
6. Establish an effective environmental management system under which specific objectives and targets are set while securely administering, evaluating and constantly improving the system.
7. Help preserve local environments by taking into account the impact that IHI's products may impose through their export while aiding local communities' efforts to reduce the environmental load of their activities through the provision of environmental products and technologies.

Revised June 3rd, 2013

# IHI Group's Environmental Vision

## Positioning of the vision



### IHI Group's Environmental Vision 2013 (FY2013 - 2018)

**The IHI Group, as a responsible global group, aims to preserve the global environment on a continuous basis through cooperation with our customers and business partners around the world.**

#### Image of the vision to be realized

The vision to be realized (a goal for FY2018) can be illustrated as...

#### Reduction of environmental burdens through products/services

- CO<sub>2</sub> emissions from operations in the IHI group total is approx. 300,000t-CO<sub>2</sub>/year, while avoided emissions through products/services worldwide reaches 10Mt-CO<sub>2</sub>/year.
- Avoided CO<sub>2</sub> emissions through products/services are included in the management target for business divisions and sectors.
- Sales ratio of eco-friendly products in entire IHI Group accounts for over 70%.
- Customers/Employees recognize that "Using IHI's products/services means we automatically conserve global environment!"
- Awards are granted to our products that contribute to global environmental preservation.

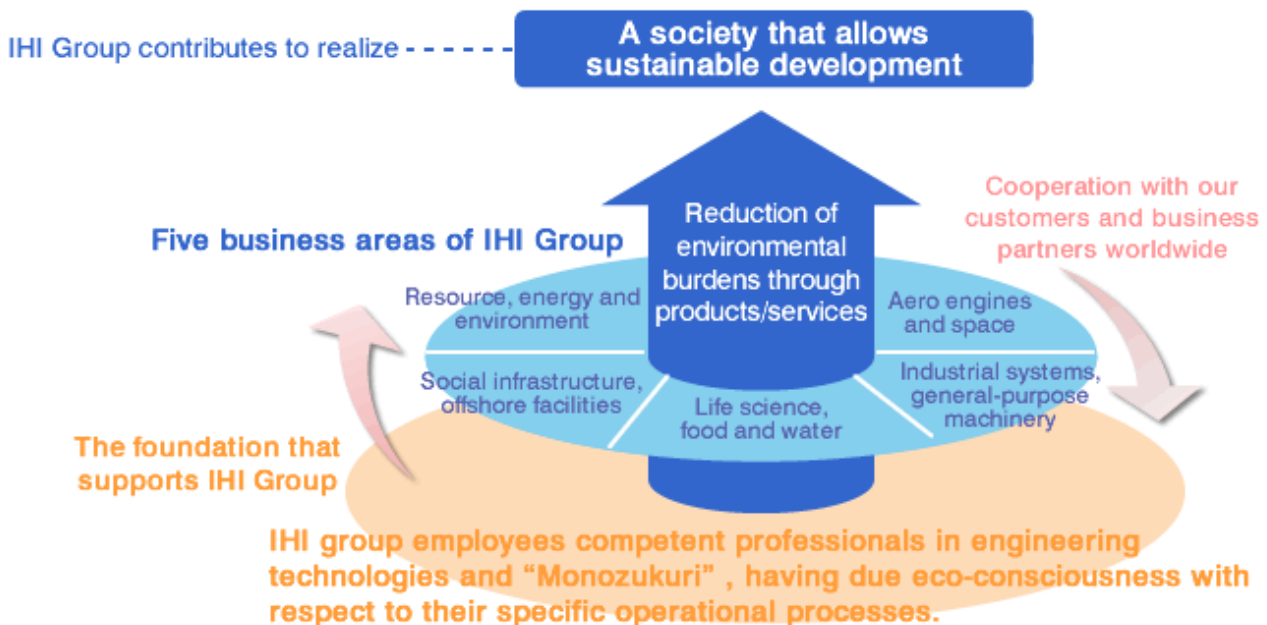
#### Reduction of environmental burdens through business operations

- As the entire IHI Group, CO<sub>2</sub> emission reduction target for business operations is publicized and successfully achieved.
- No waste of electricity and fuels, as energy savings are spread across production sites/offices.
- Green procurement is promoted to prioritize eco-conscious suppliers.
- Chemical substances in products are under strict management, which gains customers' trust.
- Protecting biodiversity has become a part of business operations.

## Promoting group environmental management

- Domestic/overseas production sites share items on environmental burdens and their reduction targets.
- Main domestic/overseas production sites introduce environmental management system and are ready to improve environmental management continuously.
- From global perspective, a system for sharing information necessary to respond to tightening environmental laws/regulations has been established.
- Through environmental internal audit, a system has been established for tracking issues to take actions as soon as a problem occurs.
- Providing information on the status of environmental activities by using house journals and intranet, etc.

## Image for realization of the IHI Group's Environmental Vision



# Actions to realize the vision

Operating process	Features of actions for each operating process				
	Energy saving Climate action	Creation of sound material-cycle society	Environmental conservation		
			Chemical substance Environmental risk	Biodiversity	
Reduction of environmental burdens through business operations	management	<ul style="list-style-type: none"> <li>◎promotion of group-wide environmental management</li> </ul>		<ul style="list-style-type: none"> <li>• to understand relevance between biodiversity and our business; to establish basic policy</li> </ul>	
	sales	<ul style="list-style-type: none"> <li>◎to propose eco-friendly products</li> <li>◎to propose environmental preservation products</li> <li>• proposal of products with large avoided CO<sub>2</sub> emissions</li> </ul>			
	R&D	<ul style="list-style-type: none"> <li>◎R&amp;D aiming at energy saving, environmental burdens reductions and energy diversification.</li> <li>◎drawing up and implementation of a guideline for eco-friendly products</li> <li>◎to expand eco-friendly products</li> <li>◎to expand environmental preservation products</li> <li>◎to publish evaluation on avoided CO<sub>2</sub> emissions</li> </ul>			
	design	<ul style="list-style-type: none"> <li>• 3R-oriented product development &amp; design</li> </ul>	<ul style="list-style-type: none"> <li>• to promote actions to control hazardous substances in products</li> </ul>		
	procurement	<ul style="list-style-type: none"> <li>◎to promote green procurement</li> </ul>	<ul style="list-style-type: none"> <li>• to promote actions to control chemical substances in products</li> </ul>	<ul style="list-style-type: none"> <li>• to survey and recognize state of use of scarce resources</li> <li>• how and what to deal with conflict minerals</li> </ul>	
	manufacture	<ul style="list-style-type: none"> <li>• to promote energy saving in production sites and transport stage</li> </ul>	<ul style="list-style-type: none"> <li>• to reduce waste generation in production sites and transport stage</li> </ul>	<ul style="list-style-type: none"> <li>• to reduce use of substances covered by PRTR law.</li> <li>• to reduce environmental risks</li> </ul>	<ul style="list-style-type: none"> <li>• to protect biodiversity in production sites.</li> </ul>
	transport				
	construction	<ul style="list-style-type: none"> <li>• to promote energy saving in construction sites</li> </ul>	<ul style="list-style-type: none"> <li>• to reduce waste generation in construction sites</li> </ul>	<ul style="list-style-type: none"> <li>• appropriate management and treatment of chemical substances used in construction sites</li> <li>• to reduce environmental risks</li> </ul>	
	test run				
	Ditto through products/ services	use	<ul style="list-style-type: none"> <li>◎to provide eco-friendly products</li> <li>◎to provide environmental preservation products</li> <li>◎to provide products with large avoided CO<sub>2</sub> emissions</li> <li>◎to maintain and improve environmental performance</li> </ul>		
maintenance					
disposal					

# Environmental Management

## Fundamental Policies

IHI Group environmental activities are carried out according to a medium-term plan drawn up every three years based on the IHI Group Management Policies. FY 2012 is the final year of the medium-term plan for FY 2010-2012 “IHI Group's Environmental Action Plan 2010”, so we concentrated primarily on responding to urgent issues concerning environmental regulations, and on building a foundation for environmental management. While the goals for responding to environmental regulations were largely met, more work remains on several themes relating to building a foundation for environmental management.

We also drew up “IHI Group's Environmental Vision 2013”, laying out the aspects of the IHI Group Vision. Its aim is to raise environmental consciousness in each employee and encourage them to reflect this awareness in their work. Based on this Environmental Vision, the IHI Group Management Policies and the degree of accomplishment of our activities of FY 2012, we drew up “IHI Group's Environmental Action Plan 2013” and are carrying out the environmental activities.



## Environmental Management System

The IHI Group formulates Group-wide environmental conservation policies through the Group-wide Environment Committee chaired by the director in charge of environmental operations. The committee promotes Group-wide environmental improvement activities while assessing and following up on the results of environmental activities.

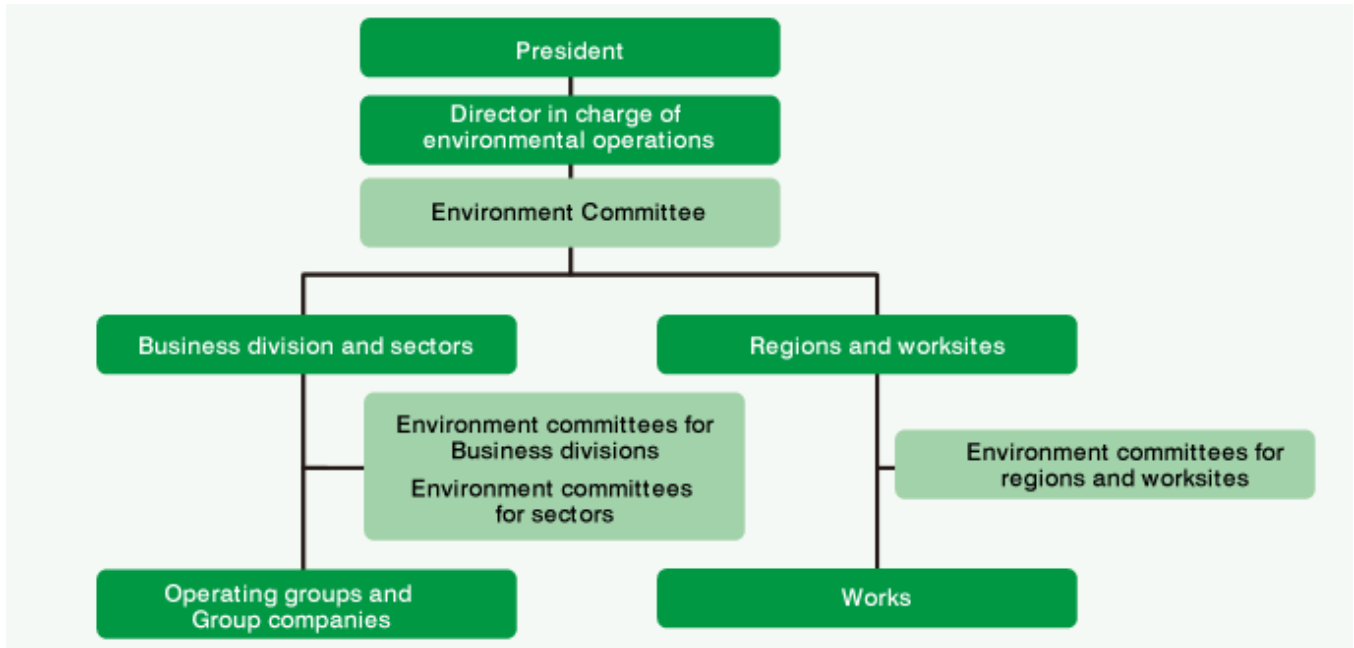
In order to develop the policies decided by the Group-wide Environment Committee into concrete activities, a liaison group in charge of environmental operations for business divisions and sectors and one for regions and work sites meet to plan and devise various measures.

Furthermore, in order to promote activities properly suited to the characteristics of each region, work site, business division, sector, and Group company, environment committees for business divisions and sectors <sup>\*1</sup> as well as for regions and work sites <sup>\*2</sup> have been established to monitor the progress of the activities.

**\*1 Environment committees for business divisions and sectors:** Committees promoting activities for environmental improvement from a managerial perspective, centered on development of eco-friendly products, environmental investment, and other efforts (including environmental management of Group companies).

**\*2 Environment committees for regions and work sites:** Committees promoting activities for environmental improvement that are tailored to the characteristics of each production site, mainly focused on the ISO 14001 activities carried out regionally and at various work sites.

## Environmental Management System



## Issues and Coming Developments

IHI Group environmental activities are conducted according to a medium-term plan drawn up every three years based on the IHI Group Management Policies. FY 2012 is the final year of the medium-term plan for FY 2010-2012 “IHI Group's Environmental Action Plan 2010”, so we concentrated primarily on responding to urgent issues concerning environmental regulations, and on building a foundation for environmental management. While these activities resulted in the goals for responding to environmental regulations were largely met, we came to the conclusion that more work remains on several themes regarding building a foundation for environmental management.

On the other hand, we drew up “IHI Group's Environmental Vision 2013”, laying out the aspects of the IHI Group Vision. Its aim is to raise environmental consciousness in each employee and encourage them to reflect this awareness in their work. Based on this Environmental Vision, the IHI Group Management Policies and the degree of accomplishment of our activities of FY 2012, we drew up “IHI Group's Environmental Action Plan 2013.”

## Activities of FY 2012 and Plans for FY 2013 and Beyond Evaluation

### ■ Review of the IHI Group's Environmental Action Plan 2010 (FY2010~FY2012)

Response to urgent issues regarding relevant environmental laws/regulations	Evaluation
Reduction environmental risks (★)	○
Disposal &/or update of PCB-containing appliances (★)	○
Promotion of energy-savings (★)	○
Removal of asbestos from asbestos-containing products/buildings (★)	○
Development of a system for chemical substance information management (★)	✕
Assessment of soil contamination risks (☆)	○
Review of rules regarding asset retirement obligation (☆)	○
Energy management (★)	○
Reduction of VOC generation (★)	✕
Establishing foundation for environmental management	Evaluation
Review of environmental management system (☆)	✕
Development of environment data system (☆)	✕
Enhancing environmental training (☆)	△
Introduction of environmental accounting(☆)	✕
Establishment of definition of product eco-friendliness (☆)	✕
Actions against climate change (☆)	△
Review of waste management standards (★)	△
Efforts for conservation of biodiversity (☆)	△
Public information disclosure (reporting) (☆)	○
Social contribution activities (☆)	△

Icons indicate degree of achievement to targets in the 3-year Environmental Action Plan 2010:

○ over 80%    △ 30-80%    ✕ below 30%



■ Overview of IHI Group Environmental Vision 2013

Item	
Promoting group environmental management	<ul style="list-style-type: none"> <li>★To establish a system for group environmental management</li> <li>○Utilization of environmental management system</li> <li>○Reduction environmental risks</li> <li>○Environmental communication</li> <li>○To collect /provide information in supply chain</li> </ul>
Reduction of environmental burdens through products/services	<ul style="list-style-type: none"> <li>★To increase quantitative contributions in avoided CO2 emissions</li> <li>★Expansion of business in eco-friendly products and environmental preservation products</li> </ul>
Reduction of environmental burdens through business operations	<ul style="list-style-type: none"> <li>★Promotion of energy saving ,actions against climate change</li> <li>○Contribution to form recycling-oriented society</li> <li>★Promotion of information management for chemical substances in products</li> <li>○Promotion of management of chemical substances at work site</li> <li>○Promotion of green procurement</li> <li>○Recognize impacts on biodiversity of our business activities</li> </ul>

★: priority subjects of FY 2013

### Status of Environmental Management Systems

IHI has acquired certification of our environmental management systems at our major production bases in Japan. In each region and at each work site, we are ensuring compliance with laws and regulations, reducing environmental impact by improving production efficiency, and promoting the design of environmentally friendly products. The effectiveness of each activity is verified through internal audits at least once a year, and the adequacy and appropriateness of the entire system are confirmed in outside reviews by third-party organizations. Regarding matters identified in internal and outside audits, we aim to raise the level of environmental management by sharing information in the liaison committee of staff in charge of environmental operations for regions and work sites.

## Acquisition of ISO 14001 Certifications in Japan

Organization		Date of acquisition	Certification body
Region or work site	Yokohama	July 1998	JQA
	Musashi and Soma	December 1999	BV JAPAN
	Aichi	May 2000	NK
	Aioi	June 2000	JQA
	Kure	June 2000	JQA
Business division or sector	Energy and Plant sector*	March 1999	LRQA

Certification bodies: JQA = Japan Quality Assurance Organization; BV JAPAN = Bureau Veritas Japan; NK = Nippon Kaiji Kyokai; LRQA = Lloyd's Register Quality Assurance

\*Acquired in former Plant sector

## Main Matters Identified in Third-Party Review of FY 2012 (suggestions for improvement)

- Matters related to effective use of internal audit results
- Matters related to the identification and assessment of environmental aspects
- Matters related to setting objectives and goals and the implementation means
- Matters related to emergency preparedness, etc.

## Main Matters Identified in Internal Audit of FY 2012

- Matters related to education and training
- Matters related to operations management such as review of voluntary management goals
- Matters related to emergency preparedness
- Matters related to storage and management of hazardous substances

## Compliance with Environmental Laws and Regulations

The cases of environmental accidents, complaints, and administrative guidance that occurred in the IHI Group in FY 2012 are as listed in the table below. We are subsequently dealing with these issues appropriately. Factors in the occurrence of incidents are analyzed by classification, such as factors related to facilities and human factors, and updates to facilities or reviews of day-to-day management methods are performed accordingly. Going forward, we will focus on training in the extraction and evaluation of potential risks as a preventative measure and promote efforts aimed at reducing the number of occurrences to zero.

### Violations and Other Incidents in the Past 5 Years in Japan

Category	FY2008	FY2009	FY2010	FY2011	FY2012
Accidents	4	3	1	1	2
Administrative guidance	1	2	0	4	2
Complaints	6	3	3	1	2

### Accidents and Response in FY 2012

[Environmental accidents]

- Oil leak into ocean from rainwater drain.

Cause: Some oil-containing sludge accumulated in oil/water separator tank overflowed.

Disposition: Performed high-pressure cleaning of oil/water separator tank.

- Oil leak into ocean from rainwater drain (recurrence)

Cause: Sludge remaining in gutter flowed out.

Disposition: Cleaned oil/water separator tank and gutter, and instituted periodic inspection and cleaning of oil/water separator tank.

To prevent a further recurrence, upgraded equipment including other equipment that might leak oil, and had other work sites do the same.

[Administrative guidance]

- Guidance on management of highly acidic solution

- Guidance on factory waste water management situation

[Complaints from nearby residents]

- Noise and vibration from company premises

- Employees' manners during commuting

## Environmental Education and Awareness Raising

Environmental education in the IHI Group includes position level-specific training as a Group-wide educational program, and environmental education carried out separately in each region and work site.

The former is conducted to make all employees well aware of the policies and goals of the Group's environmental activities.

The latter is aimed at raising the quality of certified personnel and ISO 14001 internal auditors in regions and work sites, and conducted by specialists from inside and outside the company.

In FY 2012 a refresher course for ISO 14001 internal auditors was conducted in the IHI Aichi work site. Guided by an outside instructor, the 16 participants worked in pairs, with one acting as auditor and the other as representative of the audited work site, in the case studies. Through repeated practice of the skills for observing, questioning, and checking records, the participants learned the key points of internal auditing and enhanced their qualities as internal auditors. This turned out to be a valuable educational experience that will lead to more effective internal auditing in the future.



Refresher course for ISO 14001 internal auditors

### Voice Initiatives for Biodiversity Preservation

Since FY 2010, IHI Aichi work site has worked to maintain the greenbelt areas inside the company grounds and has been carrying out activities aimed at preserving biodiversity. These activities have included nature walks by local residents and plantings of native species by local university students.

Utilizing a vast cluster of greenbelt owned by companies along the coast of the Chita peninsula, the Aichi work site has developed these activities as the “Life Relay Project”

– a collaboration between people from different perspectives, including government agencies, students, companies, and NPOs committed to biodiversity conservation.

In FY 2012, the “Life Relay Project” received high acclaim as pioneering initiatives and a model for biodiversity network building, and being expected to produce ripple effects to other regions. Those efforts were rewarded with an environmental excellence award from the Aichi governor. IHI Aichi work site intends to continue conducting activities for biodiversity preservation.



Local residents on a nature walk

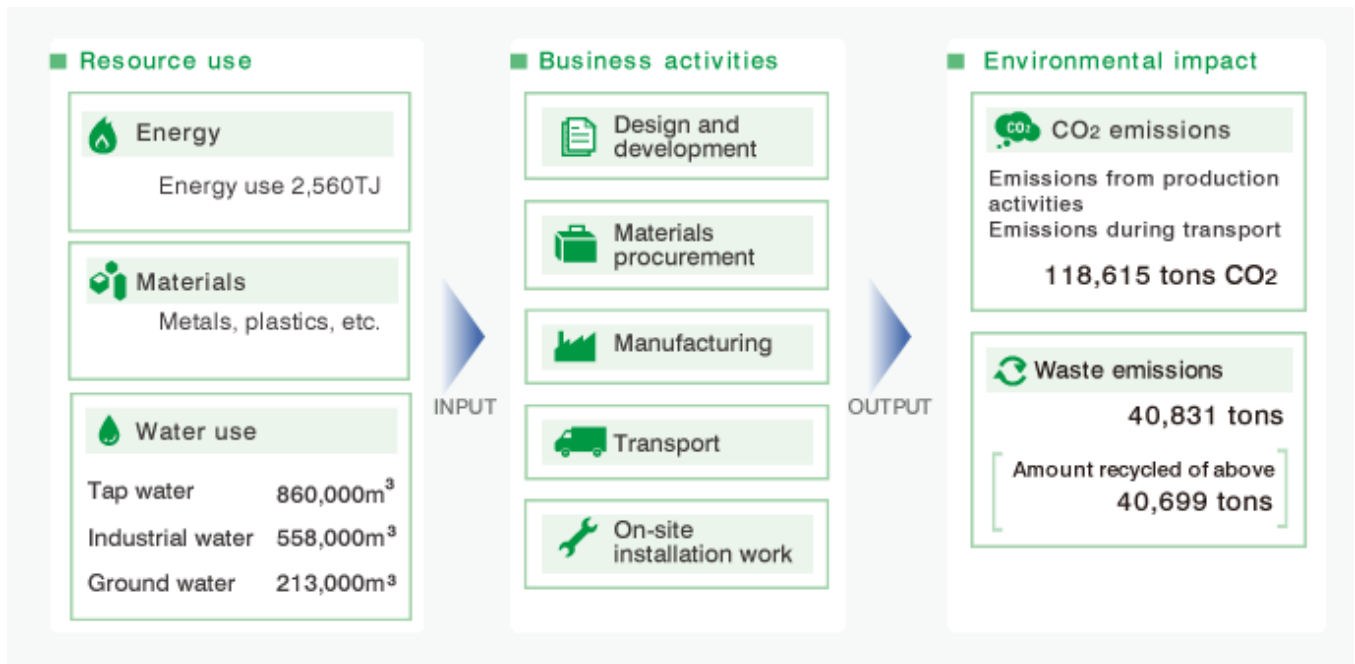
## Initiatives for Mitigating Environmental Impact

The IHI Group monitors the generation of substances impacting the environment as a result of our business activities and endeavors to reduce these.

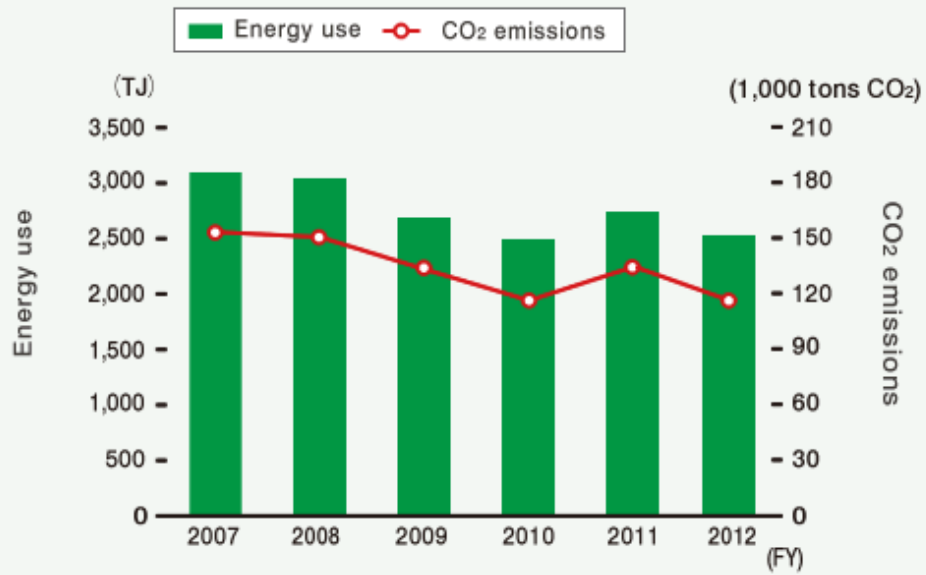
- The data covers IHI regions and work sites and IHI Marine United (currently Japan Marine United Corporation)
- A conversion factor of 0.418kg CO<sub>2</sub>/kWh was used to calculate CO<sub>2</sub> equivalent.
- Generated wastes are the total of ordinary waste disposal amount, industrial waste disposal amount, and recycled amount. Included in this amount are scrap metal and other marketable recycled materials.

\*Based on data as of May 2013.

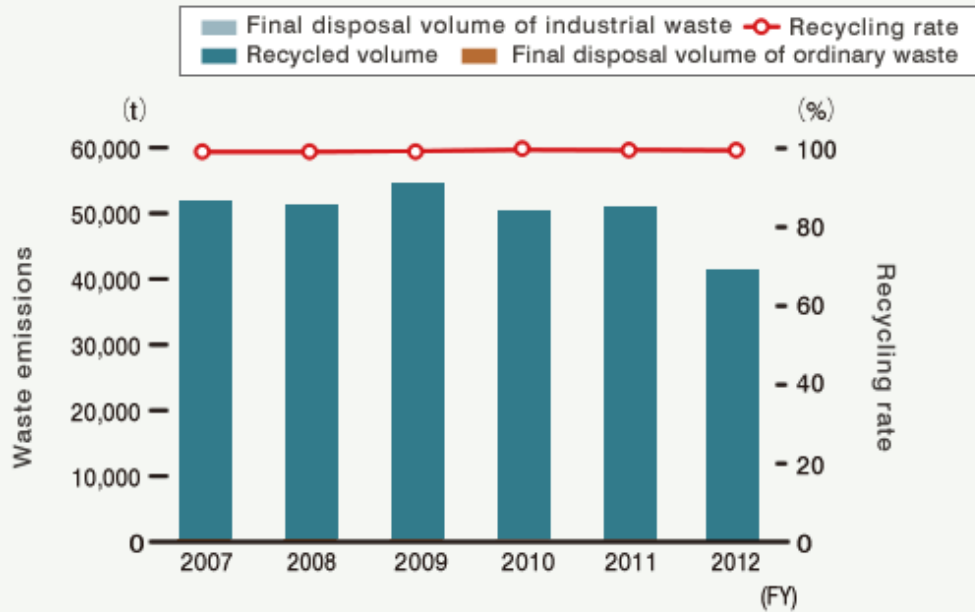
### Materials Balance



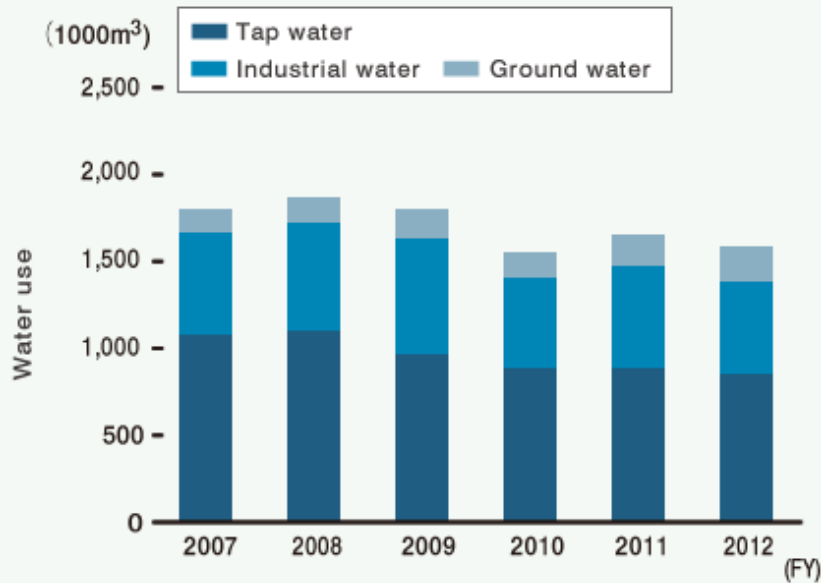
## Energy use (for production) and CO<sub>2</sub> emission trends



## Industrial waste emissions and recycling rate trends



## Water use trends



## Emissions/transfer of Class I Designated Chemical Substances under the PRTR Act

(tons)

Cabinet Order No.	Substance	Emissions	Transferred amount
20	2-aminoethanol	0.0	4.5
37	Bisphenol A	0.0	2.9
53	Ethylbenzene	217.6	8.7
80	Xylene	381.6	14.7
87	Chromium and chromium(III) compounds	0.0	44.2
300	Toluene	92.0	5.2
308	Nickel	0.0	1.3
374	Hydrogen fluoride and its water-soluble salts	0.3	4.1
392	Normal hexane	2.2	0.0
400	Benzene	1.0	0.0
410	Poly(oxyethylene) nonylphenyl ether	0.0	1.8
412	Manganese and its compounds	1.0	17.0

## Measures against Environmentally Harmful Substances

### Survey of Land Use History

This initiative is being carried out based on Japan's Soil Contamination Countermeasures Act.

The IHI Group undertook a three-year project to investigate the use history of designated hazardous substances, <sup>\*1</sup> oils, and fats in production sites and other land held by the Group. As of March 31, 2013, 68 IHI Group production sites <sup>\*2</sup> (including sites no longer in use) had been surveyed.

If soil contamination is found when constructing buildings, measures must be taken including surveying the soil contamination, disposing of it properly, and notifying administrative body. In such cases there is a large risk that construction work will take more time and cost than anticipated and that projects may not go forward as scheduled. It is therefore important to determine ahead of time the possibility of soil contamination and to estimate the expected costs at the planning stage, so as to minimize the risk of unforeseen project delays. The information gathered in this survey will be used to prevent risks from arising due, for example, to changes in the characteristics of land.



Surveying land use history

**\*1 The 25 substances listed in Article 2 of the Soil Contamination Countermeasures Act**

(including lead, hexavalent chromium, and mercury)

**\*2 FY2010:** 8 IHI production sites and offices

(Mizuho Works, Soma work site, Sunamachi Works, Toyosu IHI Building, Yokohama work site, Aichi work site, Aioi work site, Kure work site)

**FY2011:** 24 IHI Group sites

**FY2012:** 36 IHI Group sites



## Improving Waste Management

This initiative is being carried out based on Japan's Waste Disposal Act.

In all IHI regions and work sites we carry out 3R activities (Reduce, Reuse, Recycle) based on our waste management system. Since FY 2010, to further improve waste management we have (1) introduced an electronic manifest system and (2) through an outside specialist, AMITA Institute for Sustainable Economies, Co., Ltd., held waste management risk assessments and seminars designed to raise the skills levels of our waste managers. To date electronic manifest introduction has been completed at seven of the IHI regions and work sites.

In FY 2012 skill-improvement seminars and risk assessments were held at the Yokohama work site, Soma work site, Mizuho Works, Kure work site, and Aioi work site.

The seminars interspersed classroom lectures with practical exercises, including legal revisions, points to look out for in consignment agreements, and techniques for checking out local waste disposal businesses.

Then they were given reports on the risk assessment results from the work sites and factories under their own management, thereby gaining a more complete understanding of waste management and a better awareness of potential risks.

Key points of risk assessment include documentation, such as contracts and management procedure manuals, and keeping waste materials properly stored. Our aim is to further raise the management level by reviewing operation management procedures.



Confirming proper storage of industrial waste materials



Waste management seminar

## Management and Disposal of Devices Containing PCBs

This initiative is being carried out based on Japan's PCB Waste Disposal Act.

Electrical devices containing PCBs (polychlorinated biphenyls) are handled properly in all IHI Group companies. Since FY 2009 we have been stripping harmful substances from electrical devices that use high concentrations of PCBs, and so far have completed about 28% of the disposal.

We have also nearly completed a survey of electrical devices containing small amounts of PCBs and are replacing them with no-PCB devices.



Removal of devices containing PCBs

IHI Star Machinery Corporation (Chitose, Hokkaido) manufactures a wide range of agricultural machinery such as fertilizer spreader and baler wrapper, not only for the domestic market but for overseas.

Inquiries from customers concerning “management of chemical substances in products”<sup>\*1</sup> have been on the rise since FY 2010. IHI Star has been creating a company-wide management organization for handling such questions appropriately.



Baler wrapper TBW2210WN

■ Aiming to become the first runner among the IHI Group for management of chemical substances in products

In FY 2011 IHI Star reviewed the roles of each department in management of chemical substances in products and drew up a three-year vision (FY2012 to FY2014). The goal being pursued in the three-year vision is to eliminate 8 harmful chemical substances<sup>\*2</sup> from 26 kinds of products by the end of FY 2014.



company-wide meeting

In FY 2012, plans were drawn up and efforts were carried out in each department to eliminate hexavalent chromium from all products, and to complete performance assessments of alternatives to parts containing eight harmful chemical substances. The procurement section is investigating the status of harmful chemical substance content in the products of all suppliers, including overseas, while the Research & Development Department has begun performance assessments of substitute parts that do not contain harmful chemical substances. It appears that these efforts have come to win a certain amount of appreciation from customers.

Inquiries from customers concerning management of chemical substances in products are increasing as stricter regulations are being introduced worldwide.

Taking the effort of IHI Star as a model case, the IHI Group is holding study meetings for each business area and considering how to set up an organizational structure for the management of chemical substances.

**\*1 Chemical substances in products:** These mean chemical substances (materials and parts mainly used in electrical and electronic devices) contained in products provided to customers. Companies are called upon to disclose this information from the standpoints of effects on human health and ecosystems as well as recycling and waste disposal.

**\*2 Eight harmful chemical substances:** Asbestos, cadmium, hexavalent chromium, mercury, lead, polybrominated

biphenyls (including polybrominated diphenyl ethers), benzotriazole, and PFOS (including PFOSF).

## ■ Management Structure



## ■ Involvement in management of chemical substances in products (comments by people carrying out the initiatives)

### **We need to act not alone but as an organization (Kazushige Ishimoto, Research & Development Department)**



Kazushige Ishimoto,  
Research & Development  
Department

I was put in charge of the project in FY 2010, but soon found myself unable to handle inquiries from customers on my own appropriately. Organized action was needed in order to provide what customers were looking for, but at the time our company had not yet clarified the roles of each department. This is what led to the cooperation of the CSR Division and outside experts. Once an organizational structure was in place and roles were clarified along with the items that had to be carried out, our initiatives started to gather steam. The Research & Development Department is responsible for assessing performance of alternatives to products and parts containing harmful chemical substances. One issue

we need to settle is how to order the priorities of the products to be assessed.

**I would like to build up an organizational structure that can carry out these activities continuously (Akihiko Kon, Quality Assurance Department)**

In FY 2012, the Quality Assurance Department took the lead in holding meetings of all the departments to examine and assess the status of their initiatives and the issues they faced. While we intend to introduce improvements enabling us to meet customer needs adequately, restrictions on chemical substances continue to be tightened. I feel the need to proceed with the awareness that eventually the restrictions will come to apply directly to agricultural machinery.

In FY 2013 we are going forward based on the target of eliminating eight harmful chemical substances from our main products, but we also need to be able to build an management organization that can respond quickly when additional chemicals are added to the list of harmful chemical substances.



Akihiko Kon,  
Quality Assurance Department

**I am hoping to raise motivation by making management of chemical substances in products more visible (Yasuhisa Anezaki, Production Department)**



Yasuhisa Anezaki,  
Production Department

Unlike other environmental activities such as energy saving or waste management, I feel that the results of management of chemical substances in products are more difficult to see. In the case of energy saving, energy costs are reduced, while waste management results in a reduction of buried wastes. The results of these activities are readily evident to people in a way they can grasp with their senses. Right now we are working to improve the situation so that customer needs can be addressed more effectively, but I would like these efforts to lead to activities that make the results more apparent to the eyes.

I believe for our coming activities we will need to decide rules regarding which departments are responsible for implementing which duties, with an awareness of the various changes in management of chemical substances. What we are aiming for is not only continuing these activities but improving them.

**While simplifying operations, I want to get rid of differences in commitment levels across the supply chain (Kohzoh Juhrohazawa, Procurement Section)**

Procurement Section investigates whether or not each component part contains harmful chemical substances by making inquiries with the supply chain. Since we have to investigate thousands of parts regarding the existence of eight substances, this is an enormous task we are faced with.

Besides, the supply chain includes business partners who are quick to respond to our surveys and those who are very slow, as there is a tremendous difference in level of commitment to this problem. I would like to hold study meetings with business partners aiming at better information sharing so that we can get rid of these differences across the supply chain.



Kohzoh Juhrohazawa,  
Procurement Section

# Global Warming Measures

## Changes in CO2 Emissions in Production Activities

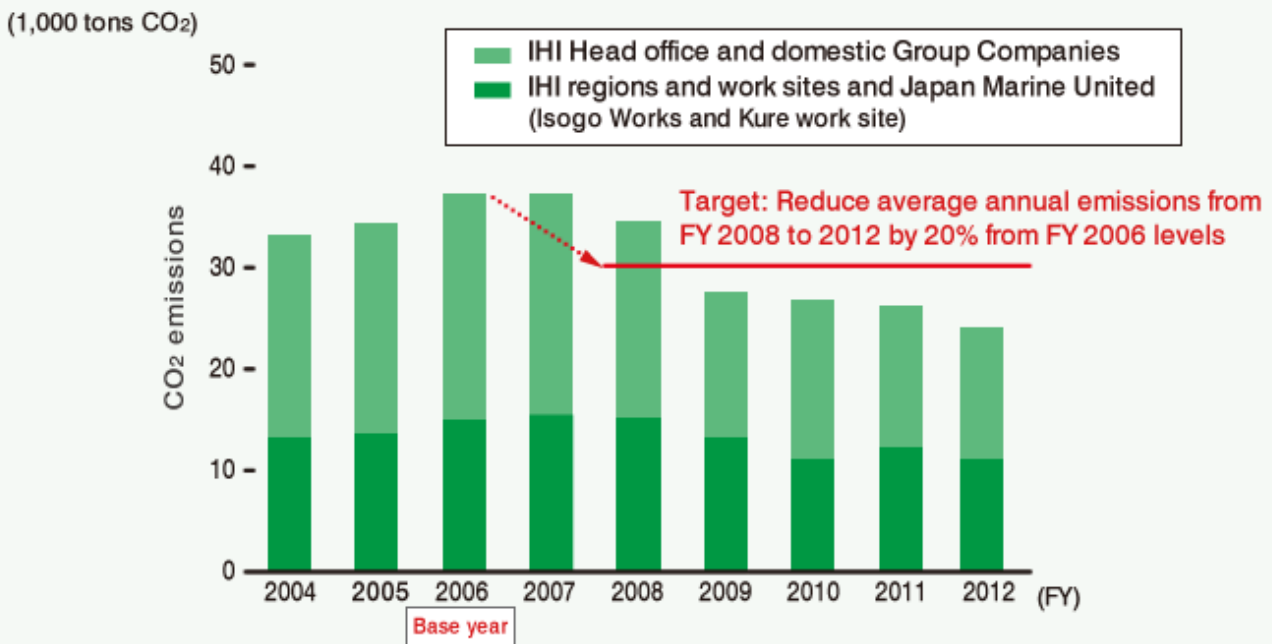
We are working to reduce CO2 emissions in our production activities, mainly by introducing energy saving measures and upgrading equipment, toward meeting the IHI Group target of reducing the average annual emissions in the period from FY 2008 to 2012 by 20% from FY 2006 levels.

CO2 emissions, at 239,000 tons in FY 2012, were below the target for the fourth consecutive year.

Over the period from FY 2008 to 2012, CO2 emissions averaged 277,000 tons per year, being below the target with a 26.3% reduction from the base year (FY 2006) level of 376,000 tons CO2.

We are saving energy and installing new equipment in order to reduce CO2 emissions in our production activities.

## Trends in IHI Group (Domestic) CO2 Emissions and Reduction Targets



- FY2012 data for IHI and domestic Group Companies is currently being reviewed, and includes a 10% error allowance.
- Figures are subject to change due to a revision of the data collection scope or other factors.
- IHI regions and work sites: Musashi and Soma region, Yokohama work site, Aichi work site, Aioi work site and Kure work site
- A conversion factor (electricity) of 0.418kg
- CO<sub>2</sub>/kWh was used to calculate CO<sub>2</sub> equivalent.

## Raising the Level of Energy Management

This initiative is being carried out based on Japan's Act on the Rational Use of Energy.

Energy management standards, in the form of equipment operation manuals focusing on energy saving, are an important part of our efforts to save energy in our operations. In FY 2009 we began revising these standards and implementing the revised manuals.

In FY 2012 we continued our program of visiting individual work sites of Group companies, providing education for energy managers and holding energy saving lectures for company executives. We will continue these activities to raise the level of energy management throughout the Group.



Seminar on energy saving for people in charge of energy management in head office region

## Reducing Energy Use for Transport

In order to use energy efficiently for transporting goods, we continue working to reduce the energy intensity of transporting products by an annual average of 1% or more in the medium to long term.

To help in achieving this target, we keep track of the transport methods, weight, distance and other data, determine the amount of energy used in transport and energy intensity and CO<sub>2</sub> emissions at each work site, and show these visually on a monthly basis.

In FY 2012 we focused on introducing improvements at work sites with the high levels of energy usage. Then at the Environment Committee held four times a year, trends in energy intensity for IHI as a whole and at each work site are reported quarterly and improvements are undertaken.

Some of our products are so large that they can be transported only by ship due to the size and weight. And other products can be transported only by truck due to the location of work site and shipping destination. In this way, there are various constraints in choosing transportation means.

Given these constraints, individual discussions are held with the people in charge of transport at each work site, and the optimal means is selected for each product while also introducing improvements in energy saving measures. Specific measures include modal shift (shifting to different transportation modes),



Various shipping boxes



Raising loading efficiency by using shipping boxes

improving truck loading efficiency, and reducing the number of trucks by carrying multiple loads at the same time. While each measure by itself may make only a small difference, cumulatively they are enabling us to realize gradual improvements in energy efficiency.

## Winter Illumination Using Green Power

The Toyosu IHI Building is lit up by winter illumination each year to improve the cityscape and create a more attractive night scene. The practice began originally with IHI-related buildings. More recently it has spread to other buildings, as neighboring companies cooperate in coordinating the colors and timing of their displays. The winter Toyosu cityscape has turned into a thing of beauty as a result. The 3,000kWh of electricity used for this winter illumination is provided by



Winter illumination at Toyosu IHI Building

Green Power produced by solar energy, for the sake of the environment. In FY 2012 the illumination lasted from December 3 to February 14, then local residents and people visiting the area took the delight in the illumination.

### \*Green Power:

Green Power is electric power generated from natural energy such as wind, solar, and biomass. Electric power derived from oil, coal or other fossil fuels produces CO<sub>2</sub> when it is generated, whereas electric power from natural energy is believed to be generated without emitting CO<sub>2</sub>. Moreover, since it is renewable energy, it can mitigate environmental impact.

(from the website of Japan Natural Energy Company, available only in Japanese)



Green Power certificate



■ Using Solar Power Generation

Drawing on the lessons of power restriction learned following the Great East Japan Earthquake, IHI's Soma Works introduced a 1,100kW solar power generation equipment and compact lithium-ion batteries in FY 2012. These went into operation in late March 2013. All the power generated by the solar power equipment is consumed in the Soma work site, contributing to a reduction in CO<sub>2</sub> emissions.



Solar power generation equipment

One reason the Soma work site introduced this equipment was the renewable energy policy formulated and promoted by Fukushima Prefecture, which was in keeping with IHI Group's policy of managing its works in an environmentally friendly way. In the years to come, the Soma work site will be managed as a site being balanced between stable supply of electricity and mitigating environmental impact. We hope that the IHI Soma work site will inspire and give hope to the local children who will take over responsibility for the future of Soma city.

■ Involvement in Environmental Management (Comments by People Carrying Out the Initiatives)

In connection with the installation of a solar power equipment at the Soma work site, four people involved in the project (Shunji Sugai, Headquarters Representative, Soma District; Katsushi Kuno, General Manager of General Affairs Department, Soma; Yuuya Yamashita in charge of equipment; and Hiroo Nakajima in charge of equipment) talked about how the equipment came to be installed and the considerations made in its installation, as well as environmental management through renewable energy.



Mr. Sugai and Mr. Yamashita in front of Soma work site solar power equipment

**How solar power generation was chosen**

Soma work site, faced with the prospect of future increases in production operations, had to decide how to deal with expected electric power shortages. Among various environmentally viable measures, introduction of solar power generation was chosen based on construction time, location, cost and other factors.

As the Soma work site ramps up production further, obtaining a stable supply of electricity in a region where power shortage will be expected is the matter to achieve. And the promotion of renewable energy

is the policy of Fukushima Prefecture. It is a happy circumstance that the introduction of solar power generation to the Soma work site helps achieving the policy of work site management and is in line with the policy of Fukushima Prefecture.

### How solar power generation is being used

In introducing a solar power generation equipment, the Soma work site went forward with planning and studies based on the following four policies.

- (1) Generated electricity will not be sold but is all to be consumed in work site.
- (2) Full use is to be made of available space in work site.
- (3) The minimum necessary power for use in a disaster is to be secured.
- (4) The power generating capacity is to be geared to summer peak demand.

Based on these policies, the solar power generation equipment was spread over five locations, four on the grounds and one on the rooftop, with care being taken not to harm the appearance from the surrounding area. Compact lithium-ion batteries were installed at the same time, as a provision against the stoppage of power from Tohoku Electric Power Company.

The status of power generation is kept track of on solar power generation monitors in two locations. Besides showing the amount of power being generated in real time, there are sections explaining how solar cells work, describing the involvement of IHI in renewable energy, and introducing renewable energy for children as well as adults. These are for viewing by all those who visit the work site.

### Synergy with large lithium-ion batteries

In FY 2013, the introduction of 3,200kWh large lithium-ion batteries in cooperation with the solar power system is expected to enable peak to shift. After introducing the large lithium-ion batteries, we will verify how to operate them efficiently in cooperation with the solar power generation. The aim is to achieve both environmental and efficient business management, while embodying the corporate message “Realize your dreams” as a pioneering company that mitigates environmental impact, in appealing to other work sites and to other companies interested in the project.



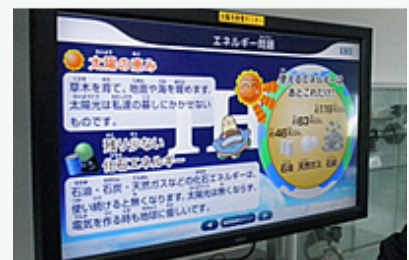
Compact lithium-ion battery



Panel layout of solar power generation and power generation status



Graph of power generation trends



Explanation for children

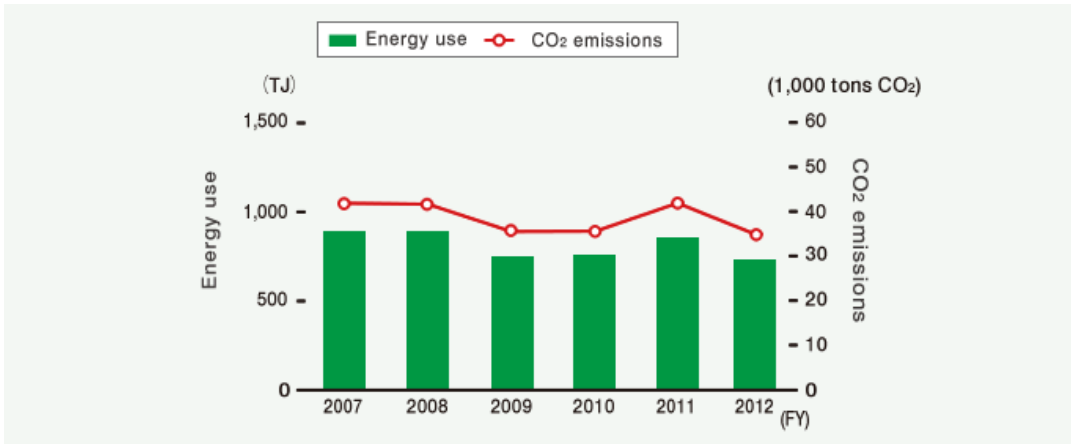
### **The expectations of our former president**

Toshio Doko, a past president of IHI, predicted that solar systems would become a domestic energy source for meeting future energy demands in resource-poor Japan when serving as the first chairman of the Solar System Development Association established in 1978. We feel a deep connection between this project and Mr. Doko, who made the decision to get into the jet engine business and to open the Tanashi Works that was the predecessor of the Soma work site.

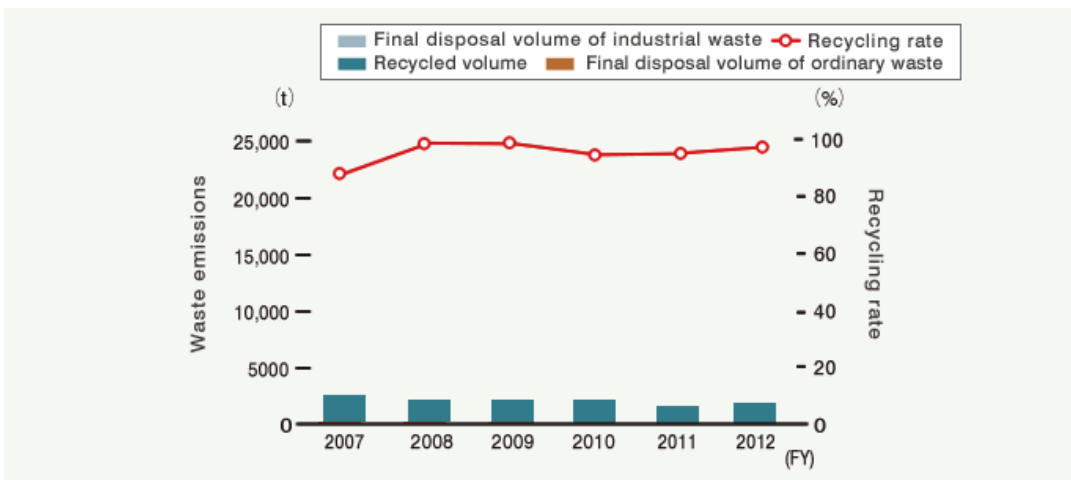
# Site Data

## Musashi / Soma Region

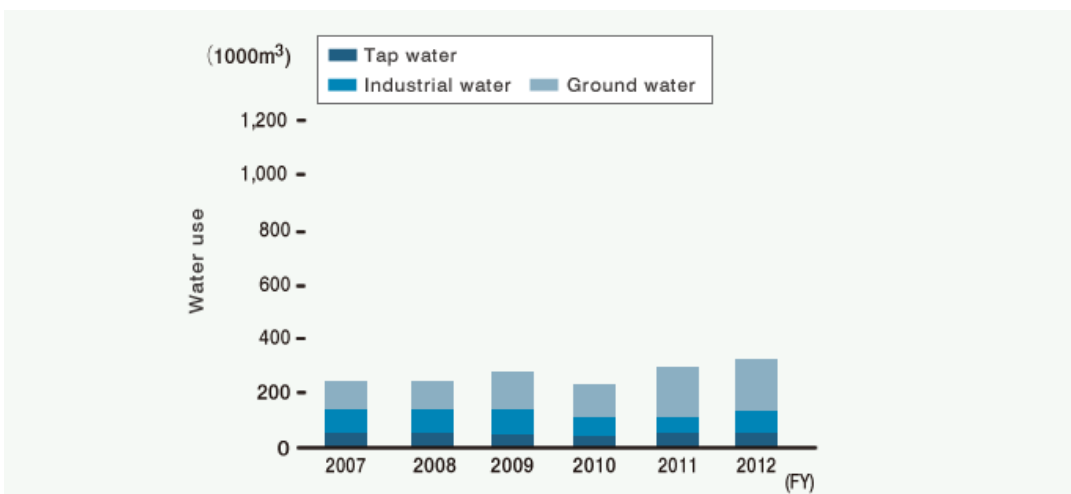
### Energy use (for production) and CO<sub>2</sub> emission trends



### Industrial waste emissions and recycling rate trends

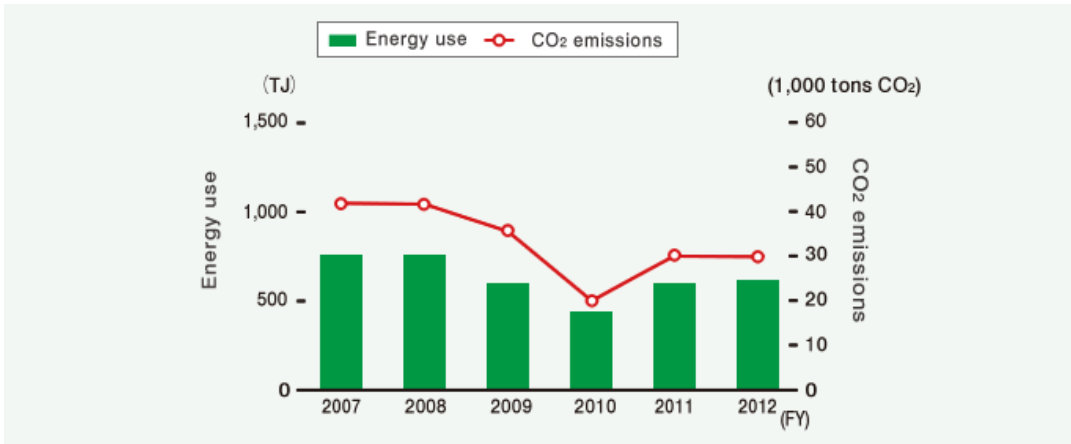


### Water use trends

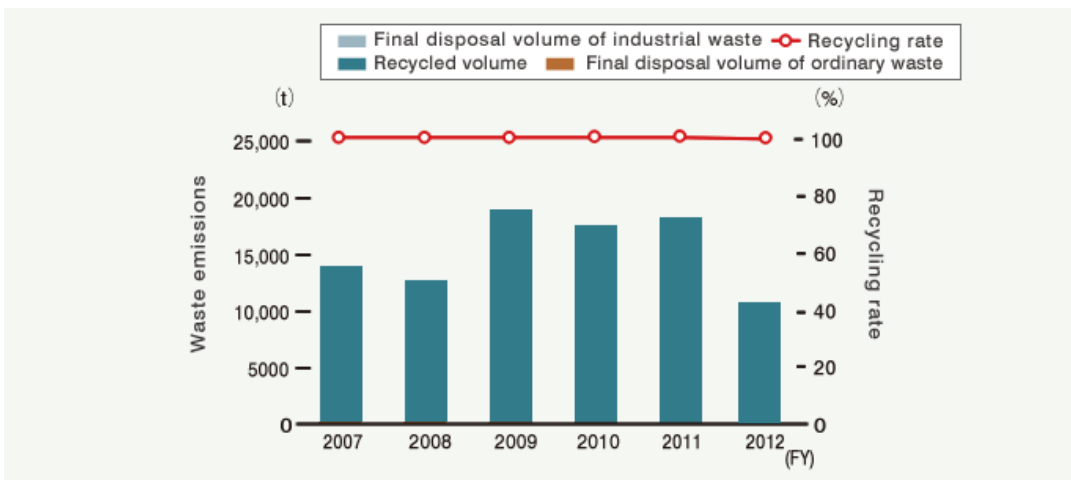




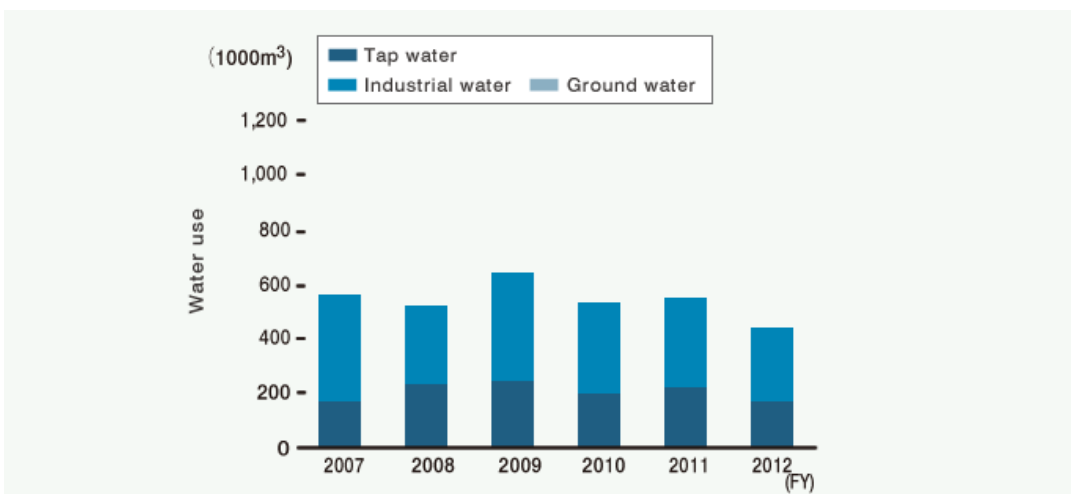
### Energy use (for production) and CO<sub>2</sub> emission trends



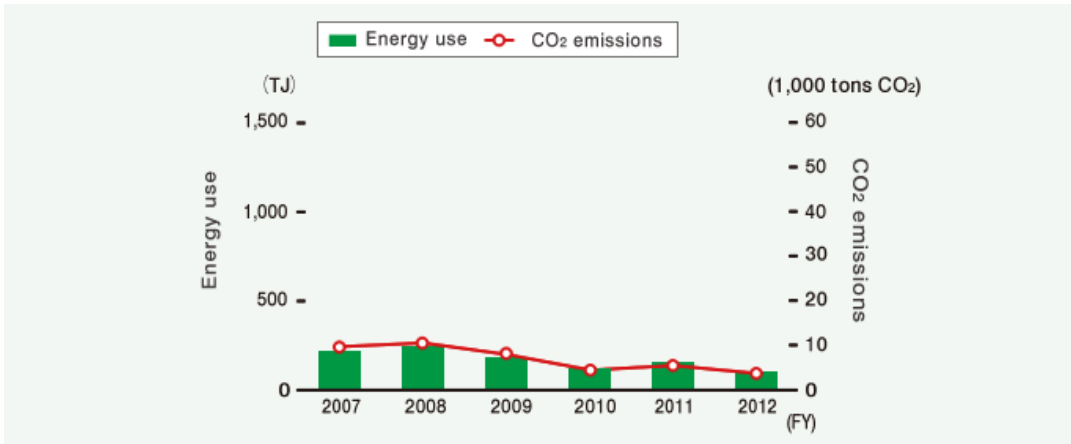
### Industrial waste emissions and recycling rate trends



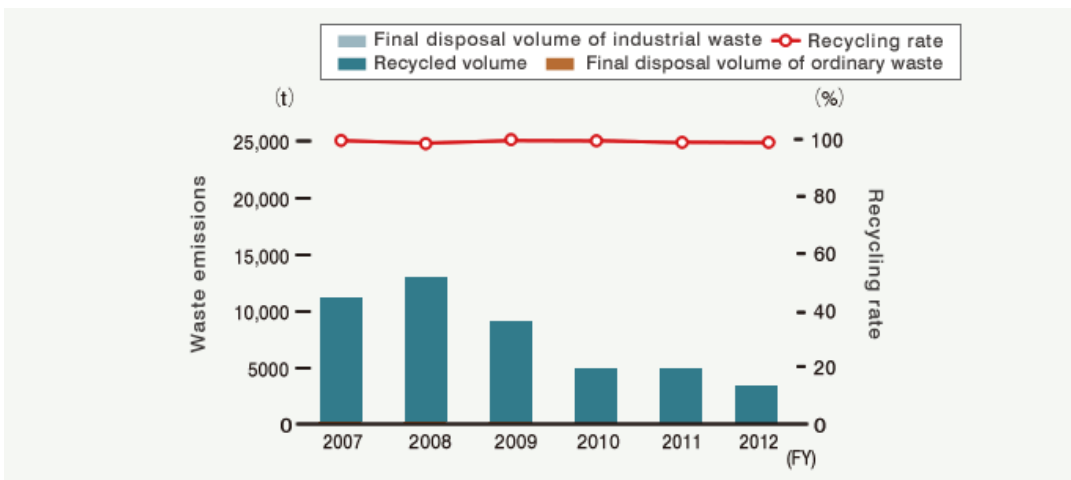
### Water use trends



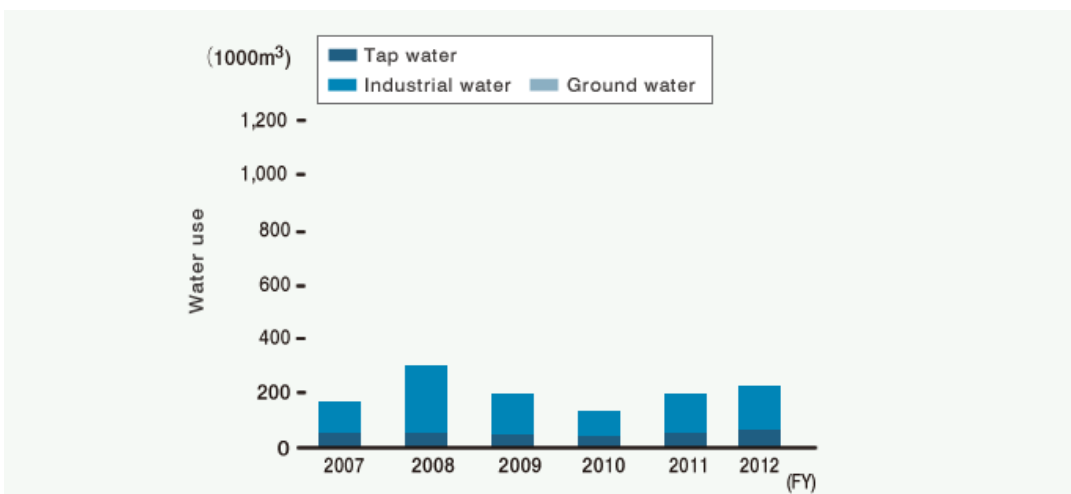
Energy use (for production) and CO<sub>2</sub> emission trends



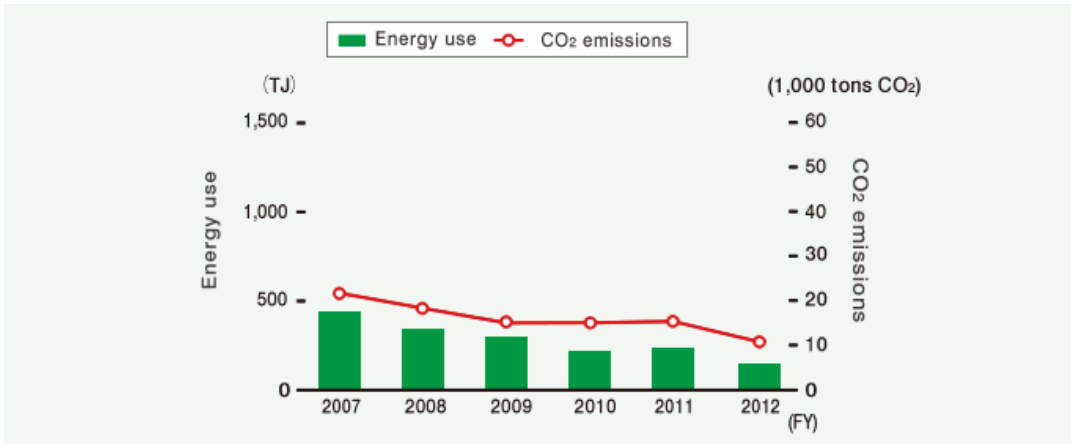
Industrial waste emissions and recycling rate trends



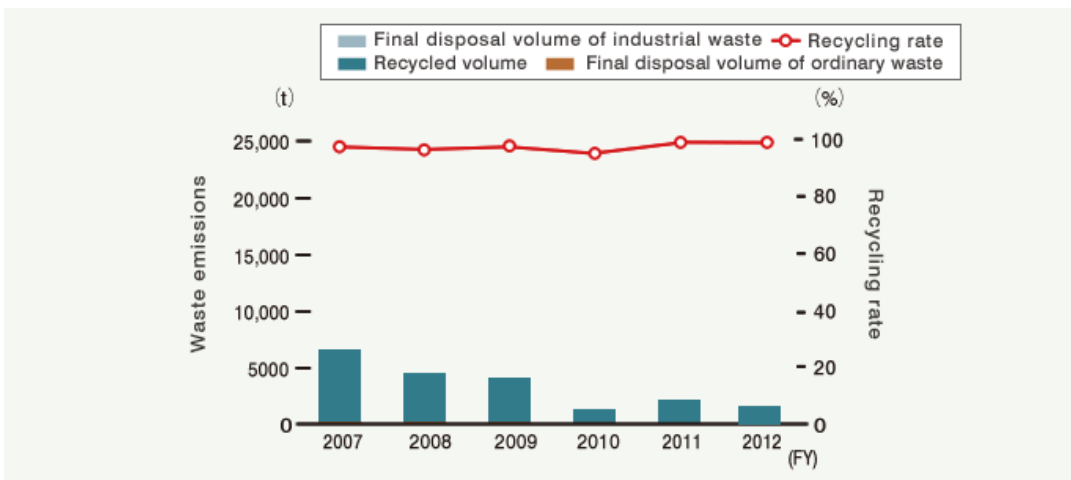
Water use trends



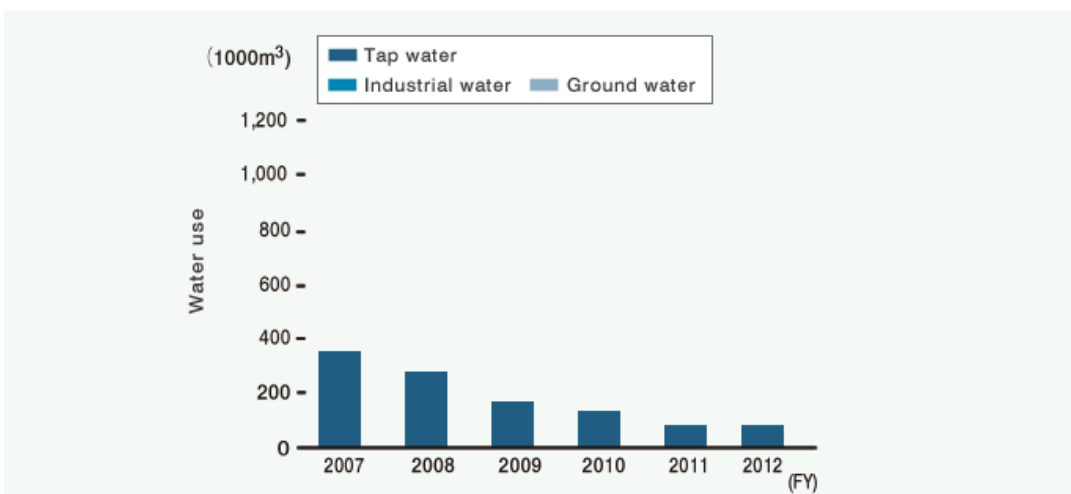
Energy use (for production) and CO<sub>2</sub> emission trends



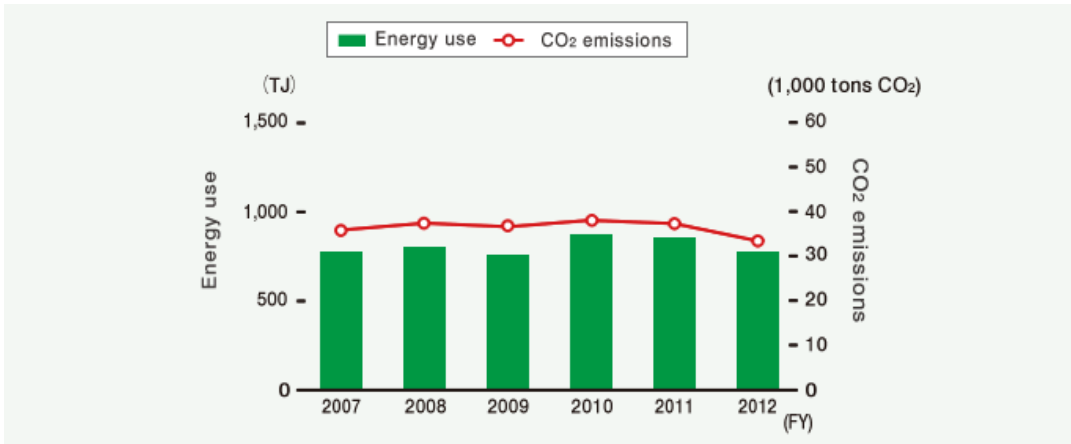
Industrial waste emissions and recycling rate trends



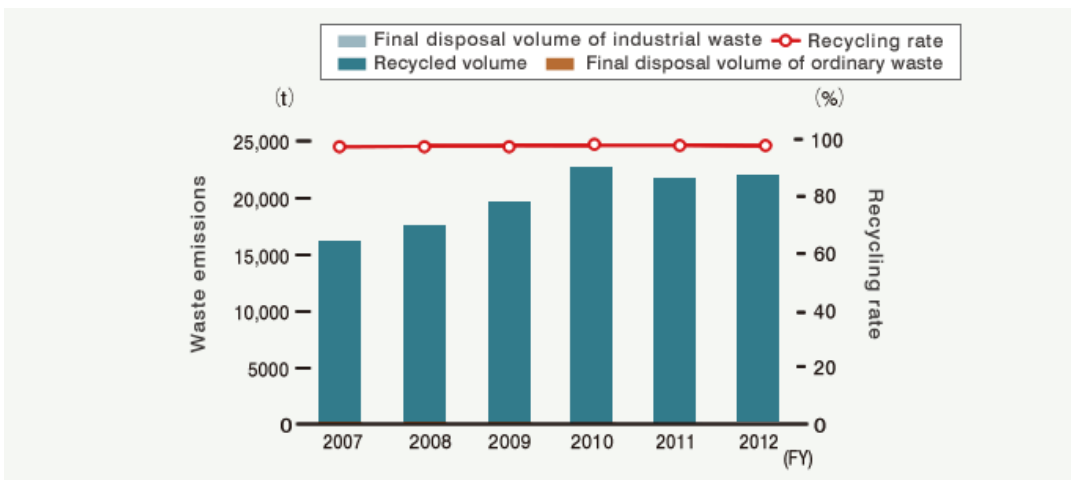
Water use trends



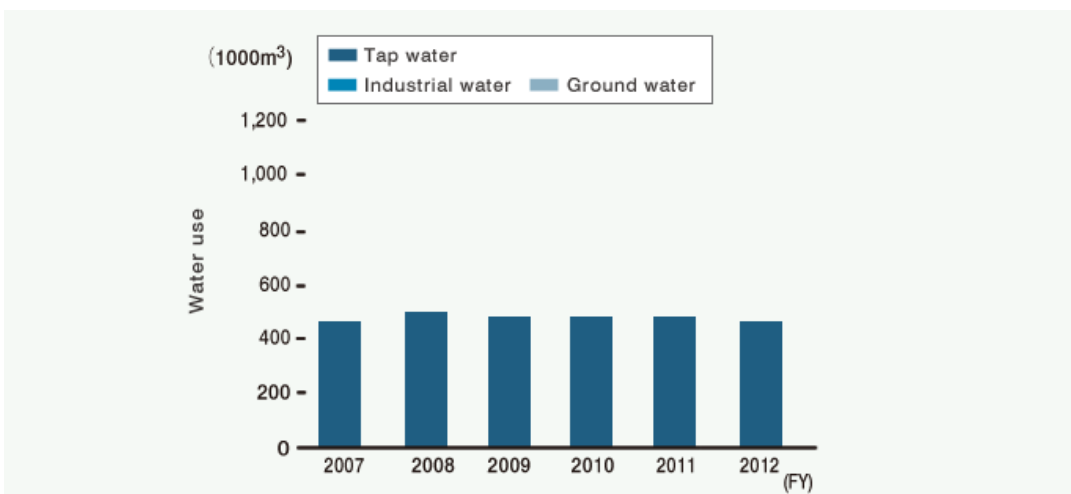
Energy use (for production) and CO<sub>2</sub> emission trends



Industrial waste emissions and recycling rate trends



Water use trends





# IHI Corporation

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