KOMATSU

Global Teamwork

CSR & Environmental Report 2011

People and Technology – Building a Bridge to the Future

Pursuing sustainable growth through the CSR activities of our core business.

First, I would like to express my heartfelt sympathy to all who have suffered in the Tohoku earthquake and tsunami that struck in March 2011. Immediately following the quake, Komatsu made construction equipment available under free of charge lending, to assist with restoration and reconstruction. And our commitment to supporting the reconstruction of the devastated areas through our business activities is ongoing.

Komatsu's Management and CSR (Corporate Social Responsibility)

Komatsu's current business environment can be represented by the status of our strategic markets – China in the forefront, followed by the rest of Asia and the CIS, Latin America, the Middle East, and Africa. These markets are growing at a satisfactory rate, and we anticipate that the growth of these countries and regions will continue to be a driving force in the future.

In step with our mid-range management plan and its March 2013 targets, our initiatives are focused on incorporating Information and Communication Technology (ICT) into products and components, making further progress in ensuring safe and environmentally friendly performance, and expanding and improving our sales and after-sales service organization in our strategic markets. Through these activities, we will develop not only business for Komatsu, but also the products and services that we supply to our customers will contribute to economic development and a better standard of living, and to reduced environmental impact and improved safety.

The world faces a host of challenges and expectation from society towards responsible corporate behavior is growing. Komatsu is conscious of this responsibility and believes that our core business which embody our strength are in fact CSR activities that respond to society's demands.

In the years to come, we will be constantly vigilant in ensuring that the actions of our management are in line with the expectations and demands of society. As we carry out our CSR activities, we will engage with our stakeholders through two way dialogue in order to better understand what our top priority issues should be. By doing so, we hope to enhance the trust placed in us by society and to contribute to sustainable growth.

Environmental Activities

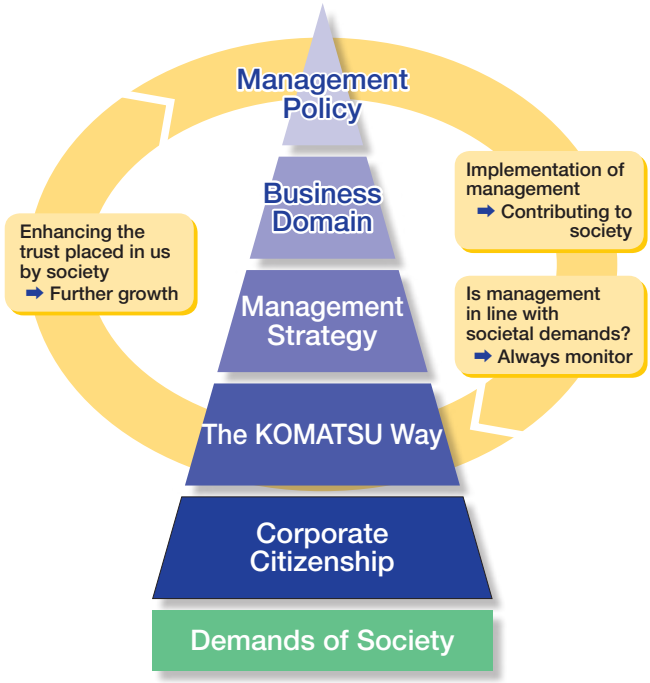
Komatsu considers environmental activities a top management priority. To meet the mid-range management targets set last year, we are actively pursuing initiatives using measures that are both "proactive" and "protective."

On the "proactive" side, we are emphasizing reduction of CO_2 emissions throughout product use, to help mitigate climate change through a variety of measures. For example, we are reducing the environmental impact of products throughout their life cycle and expanding the market for low-fuel consumption hybrid hydraulic excavators. In addition, our biodiesel fuel project is working on the local production of carbon-neutral biodiesel fuel. Last year we also enacted a "Declaration of Biodiversity." One of our first initiatives was to dedicate a space in the place Komatsu was founded as a rural natural recreation area for children to enjoy nature and get hands-on experience with growing plants. We also stepped up activities to increase the green coverage ratio in all our plants.

On the "protective" side, we have started sales of construction equipment that meets the Tier4-interim emission standards taking effect in 2011, and are actively reducing the use of chemical substances that are of environmental concern.

We will continue to maintain strong cooperation with our overseas affiliates, distributors, and business partners around the world to bolster our environmental activities, with even higher objectives in sight.

◆CSR and Management Cycle



Sharing our Values within the Group

Serving as cornerstones of our actions are The KOMATSU Way and Komatsu's Worldwide Code of Business Conduct. The KOMATSU Way comprises a set of values, basic attitudes and patterns of behavior to be passed on to the future

generation which ensure that our strong corporate structure prevails, even if the management environment changes. The KOMATSU Way was revised in FY2011 to incorporate, among other features, our attitude in pursuing relationships with customers which we call “Brand Management”. We also revised Komatsu’s Worldwide Code of Business Conduct, which was formulated in 1998, for the first time in four years in view of the ever increasing importance of CSR.

Group employees around the world share these values and rules, and through this we strive to reinforce a system by which we seek to increase the trust given to us from society.

People and Technology – Building a Bridge to the Future

Komatsu celebrated its 90th anniversary in May. The people and technology that have preserved the company’s corporate tradition since its founding are Komatsu’s most important management resources.

To extend these resources for another ten years to our 100th anniversary and further into the future, we have chosen the slogan “People and Technology – Building a Bridge to the Future” in an effort to accelerate global human resource development and enhance the technological skills of our company. This is an effort which we wish to align with our CSR activities.

At Komatsu, all of our employees share the belief that “our corporate value is the total sum of trust given to us by society and all stake holders.” We are determined to continue to build on our CSR activities through dialogue with our stakeholders and society – listening to their expectations and requirements and discovering the most effective measures which tie to our core business.

Kunio Noji
President and CEO

The Ten Principles of the Global Compact

THE GLOBAL COMPACT
WE SUPPORT

[Human Rights]
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: Businesses should make sure that they are not complicit in human rights abuses.

[Labour Standards]
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: the elimination of all forms of forced and compulsory labour;
Principle 5: the effective abolition of child labour; and
Principle 6: the elimination of discrimination in respect of employment and occupation.

[Environment]
Principle 7: Businesses should support a precautionary approach to environmental challenges;
Principle 8: undertake initiatives to promote greater environmental responsibility; and
Principle 9: encourage the development and diffusion of environmentally friendly technologies.

[Anti-Corruption]
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

* The United Nations Global Compact is a voluntary code of conduct in the four areas of human rights, labor, environment, and anti-corruption promoted by the United Nations for adoption by companies.

OUR APPROACH TO CSR

We define our CSR priorities by understanding where our business activities intersect with our contributions to society.

From how we deliver our products to our customers to how we develop fruitful relationships with our people and the communities where we do business, our CSR priorities provide us with the foundation to create lasting business and social value.

In 2009, Komatsu reflected on our company history and recognized that many of our activities over the past 20 years met the needs of both our business and society, staying true to our core belief that "Our corporate value is measured by the degree of trust placed in us by society and our stakeholders." We also recognized that to meet the sustainability challenges of the future, we needed to define our CSR priorities based on their relevance to our business and their importance to our stakeholders.

FOCUSING ON MATERIAL ISSUES — Define a set of global CSR themes —

This year, with the support of Business for Social Responsibility (BSR), a nonprofit organization, Komatsu undertook a materiality assessment to accomplish the following objectives:

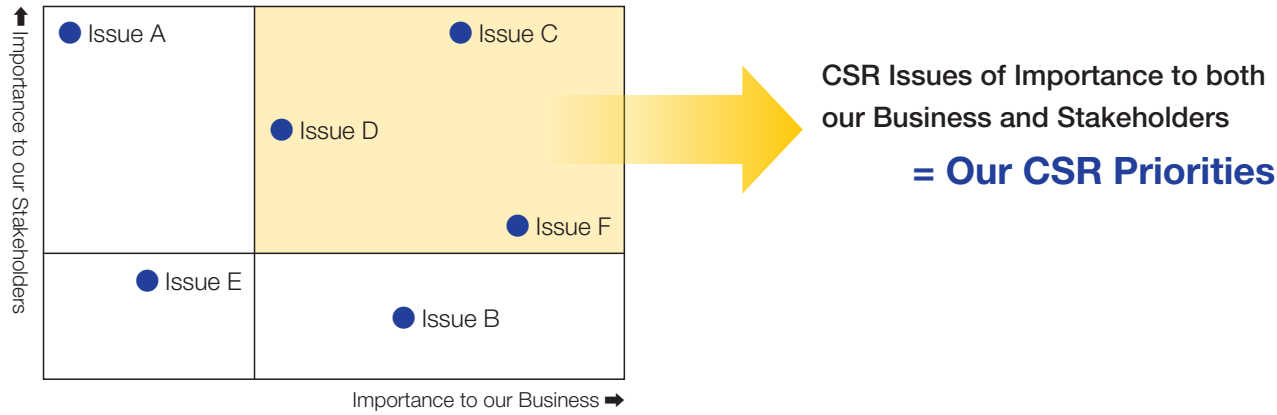
1. Identify a set of CSR issues and prioritize these CSR issues by their relevance to our business and their importance to our stakeholders
2. Define a set of global CSR themes and activities

1. Identifying a set of CSR Priorities Relevant to our Core Business

From a list of many CSR issues, we selected those relevant to Komatsu as a construction/mining and industrial equipment manufacturer. We then evaluated CSR issues on their importance to our business. To understand the relevance of CSR issues to our business, we interviewed senior executives across our company, including leaders of regions outside Japan. These interviews helped us to understand the degree to which CSR issues interact with our business priorities and operations. We then evaluated CSR issues on their importance to our stakeholders. To understand the relevance of CSR issues to our stakeholders, we reviewed external reports, viewpoints, and public statements published by governments and policy makers, issue experts and advocates, media, suppliers, and customers. We also took into consideration BSR's view of stakeholder importance.

◆Evaluating CSR Issues

We evaluated CSR issues based on the degree of importance to our business shown on the horizontal axis, and the degree of importance to our stakeholders shown on the vertical axis. The CSR issues important to both businesses and stakeholders came to the top right quadrant.



We narrowed our focus to sixteen material issues across six categories. By focusing on the material issues that are most important to our business and our stakeholders, we believe we are in a strong position to leverage our core strengths as an equipment manufacturer and create lasting social impact going forward.

◆OUR CSR Priorities

Products, Services, and Customers
Products that enhance safety
Responsible marketing and customer care

Employees
Human resource development
Safety and health
Respecting employees

Ethics and Governance
Cooperation with stakeholders
Corporate governance and compliance
Compliance with social norms including business partners

Environment
Environmentally-friendly products
Environmental efficiency (facilities, such as plants, and operation sites)
Remanufacturing

Human Rights
Respecting human rights
Equal employment

Local Community
Development of local communities
Disaster relief
Improving local residents' quality of life

2. Defining a set of Global CSR Themes

By developing a set of themes around our most important material issues, we implement CSR and meet the needs of our business and our stakeholders. By going through a process of engaging officers in discussions on "What we should do to pursue CSR Priorities" as well as taking in consideration BSR's view as a third party, we established three core CSR themes to guide our strategy and implementation:

■ Enhancing Quality of Life —Providing products required by society—
■ Developing People
■ Growing with Society

To support these core themes, we developed key business activities for each theme that outline specifically how we are pursuing CSR at Komatsu. These business activities promote our CSR themes and priorities, and they also support our three-year mid-range management plan, which we began in April 2010 under the title "Global Teamwork for Tomorrow."

◆Komatsu's CSR Themes and Key Business Activities

■ Enhancing Quality of Life —Providing products required by society—

- Providing products and services that contribute to infrastructure development and improve quality of life
- Improving productivity, safety, and efficiency and enhancing energy conservation through the use of ICT
- Improving environmental efficiency at operation sites and facilities, such as plants
- Reducing our effect on the environment throughout the product life cycle
- Enhancing safety among society, customers, employees, and business partners

■ Developing People

- Contributing to human resource development in local communities
- Enhancing our employees and suppliers through The KOMATSU Way
- Enhancing our employees and distributors through "Brand Management"

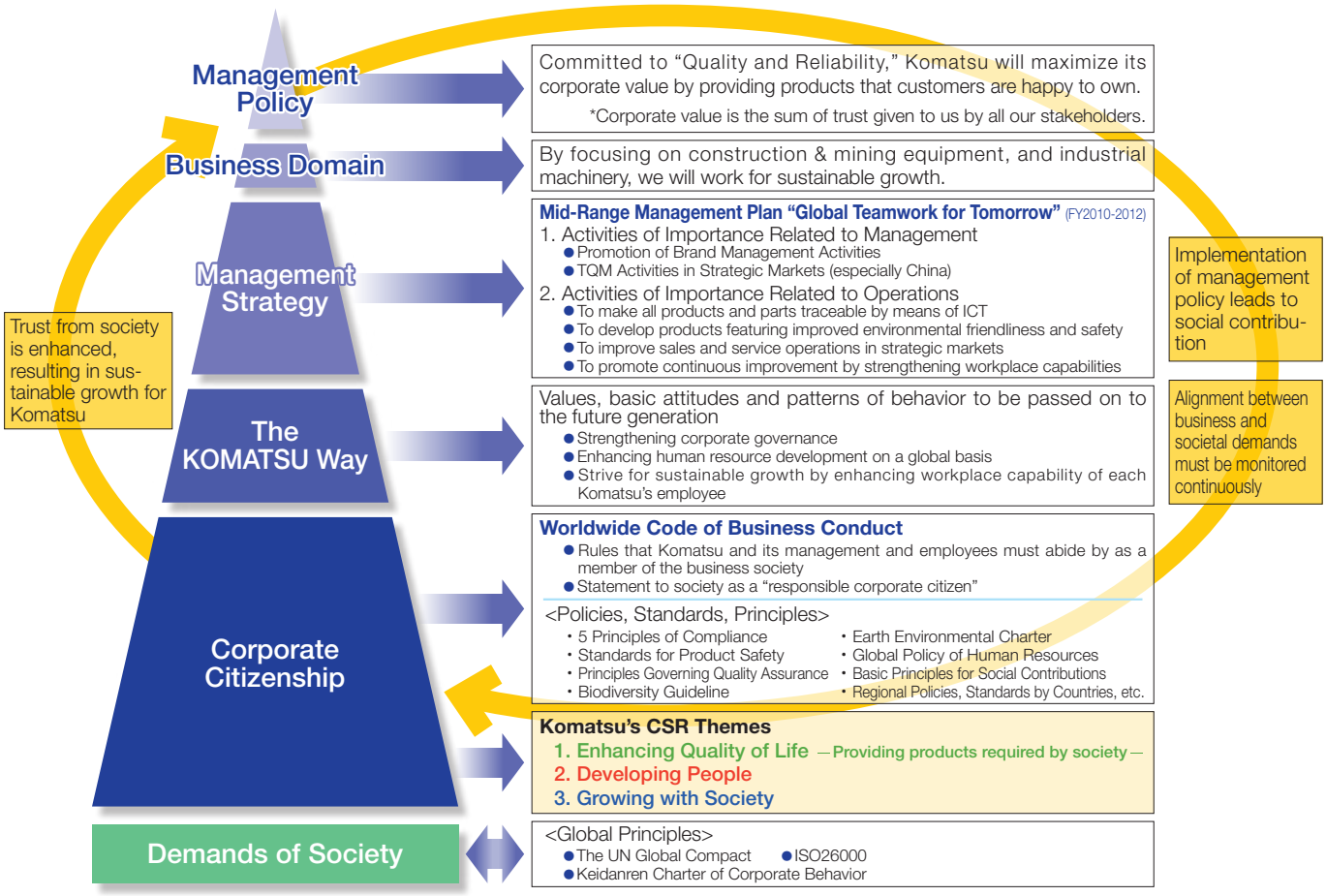
■ Growing with Society

- Engaging in dialogue with our stakeholders
- Providing social contributions through the use of our core technologies and resources (e.g., disaster relief or activities to remove antipersonnel land mines)
- Contributing to our local communities where we do business
- Strengthening our corporate governance and compliance
- Promoting compliance with environmental, labor, and social norms within our group and among business partners

INCORPORATING CSR INTO MANAGEMENT

An important aspect of implementing CSR is how we incorporate it into our overall management framework.

For this reason, we have created a cycle for implementing CSR that ensures alignment between our CSR priorities and our company's core management philosophy, strategies, and policies.



- We believe that a corporation is a social entity with a responsibility to implement management policy which leads to social contribution.
- We also believe that a corporation must continuously check whether its business activities are aligned with the demands of society. We bolster our CSR review cycle by engaging and listening to our stakeholders, reviewing external trends in business and sustainability, and adhering to regional, national, and international guidelines and principles, such as those provided by the UN Global Compact, the International Organization for Standardization (ISO), and the Keidanren (Japan Federation of Economic Organizations).
- Through responsible corporate behavior, trust from society is enhanced, resulting in sustainable growth for our corporation.

Editorial Policy

This report presents, in an easy-to-understand manner, the most important aspects of CSR, based on the CSR Themes determined in the course of FY2010.
Furthermore, the title was changed from "Environmental & Social Report" to "CSR & Environmental Report."

Report based on CSR Themes

- The report details the contents of the three CSR themes through interviews with the executive officers in charge.
- In selecting a "Special Story" for each theme, we tried to include aspects that are currently perceived by society and by Komatsu as being important.
- In each theme, we presented the main initiatives or something of a topical nature.

Printed report and Web posting

- The written report presents information that should be reported to all stakeholders, because it is highly important, new, or has been revised.
- The website is used to release (1) general information, such as policies and general rules, (2) information on ongoing activities and initiatives, and (3) a comprehensive disclosure of detailed and incidental information.

Website
http://www.komatsu.com/CompanyInfo/csr/2011/

Independent Review

Director, Advisory Services
Business for Social Responsibility (BSR)
Mr. Raj Sapru

Komatsu joined BSR in June 2010 and partnered with us in establishing strategic priorities and creating an approach to identify Komatsu's most important sustainability issues—steps we believe are critical to CSR leadership.

To this end, BSR worked with Komatsu to undertake a series of investigative and planning activities during 2010, including:

- Engaging in a series of in-depth interviews with senior executives within Komatsu, including Komatsu's regional presidents in strategic markets around the world
- Providing our view on where Komatsu's CSR approach could be enhanced
- Undertaking a materiality exercise (described on page 3) to identify the CSR issues of greatest significance to Komatsu and its stakeholders
- Establishing, from the materiality exercise, a set of CSR themes for Komatsu to provide a framework for managing CSR activities and performance

We've been impressed by Komatsu's desire to focus on top strategic priorities, and we commend the company for the care it has taken to create a pathway towards making a positive difference. We are also impressed with the integration of The KOMATSU Way, a set of foundational values, principles, and practices, across all its business activities and operations.

Looking forward, we hope that Komatsu will continue to manage its approach to CSR with an ambition that is equal to the size and global scope of the company and the scale of the challenges we face as a society. CSR requires commitment and engagement, and we believe Komatsu is better positioned today to follow through on its commitment to sustainability and social responsibility.

Guidelines Used

- "Environmental Report Guidelines 2007" (Ministry of the Environment of Japan)
- "The 2006 Sustainability Reporting Guidelines" (Global Reporting Initiative [GRI])

Period Covered

This report in principle covers the data for the period from April 1, 2010 to March 31, 2011, though information for the period after April 1, 2011 is also included.

Subsequent Reporting Schedule

- Japanese version: Expected July, 2012
- English version: Expected July, 2012

Contents

Photo on the cover

The images in the small and medium-sized circles show jatropha plants grown on a vacant lot of the Adaro Mine in Indonesia, the one in the large circle shows jatropha fruit from which biodiesel fuel is produced. The dump truck shown is an HD785 model running on biodiesel fuel at the Adaro Mine.
You will find the related story on page 15.

CSR Theme 1

Enhancing Quality of Life

–Providing products required by society–

HB205 Hybrid Hydraulic Excavator

Key Activities

- Providing products and services that contribute to infrastructure development and improve quality of life
- Improving productivity, safety, and efficiency and enhancing energy conservation through the use of ICT
- Improving environmental efficiency at operation sites and facilities, such as plants
- Reducing our effect on the environment throughout the product life cycle
- Enhancing safety among society, customers, employees, and business partners

Enhancing Quality of Lives Placing Safety as Top Priority

Tetsuji Ohashi
Director and Senior Executive Officer
President, Production Division, Supervising Information Strategy and Environment
Komatsu Ltd.

— What do you mean by "enhancing quality of life"?

Ohashi: When viewed on a global scale, there are still many countries and regions that lack the infrastructure needed to secure people's livelihood. Urbanization, in the form of housing, roads, hospitals and stores, can bring prosperity to such areas. A necessary component for implementing this development is construction equipment which Komatsu manufactures. I have always felt very strongly about the need to enhancing the lives of people living in this kind of challenging environment.

Indonesia, for example, is benefiting from the fruits of industries such as mining and forestry. Construction and mining equipment can play an important role, as a tool in the effort to bring prosperity to the local community.

— When one thinks of construction equipment, usually something big and heavy comes to mind, which is very different from the high-tech ICT.

Ohashi: Take KOMTRAX, for example (see pages 9 and 10). It started out as a system for managing vehicle location and maintenance information, and has evolved step by step. Rather than expecting perfection from the start, it is typical of Komatsu ICT to make steady progress forward, providing real-world answers and solutions.

I think of ICT as being firmly based in reality, not a pipe dream. For example, rather than immediately making everything unmanned, I prefer an ICT that can work with people, where machines assist with part of the job, the kind of down-to-earth ICT that can be optimized as it evolves a step at a time. I believe that in taking this course, Komatsu will advance, and this in turn will help our customers advance. Regulations will be revised, and the level of society as a whole will rise.

— How does Komatsu respond to the global environmental challenge?

Ohashi: We focus on two aspects.

The first aspect is our environmental response at the work site, in other words, the development of environmentally friendly products. A clear example of this is when Komatsu developed the world's first hybrid hydraulic excavator in 2008. This product, which features an average fuel efficiency improvement of 25%, helps resolve the concerns of customers who are sensitive about the environment. Moreover, our non-hybrid equipment meets emission standards for Japan, the U.S.A. and Europe, and we are focusing on developing engines that have reduced nitrogen oxide (NOx) and particulate matter (PM) emissions.

These environmentally-friendly products do not simply advocate a concept, they strive to increase economic efficiency and provide customers with realistic solutions. We, as manufacturers, must keep our feet firmly on the ground and give shape to concepts and ideas. "Giving shape to something" - I think that this is one of Komatsu's strengths.

The second aspect is our work on environmental initiatives directed at Komatsu's own business activities. Our efforts center on observing environmental regulations worldwide at all our manufacturing units, including those of our business partners.

While our targets so far have been energy conservation, zero emissions, improving recycling rate, and green procurement, we now want to work toward reducing CO_2 emissions globally and to give due consideration to biodiversity, by stepping up activities to increase the ratio of green space on our plant premises. Regarding ISO14001 certification, our goal is to have all manufacturing facilities that have not yet obtained certification do so, worldwide.

— What is meant by reducing the environmental impact of products over their lifecycle?

Ohashi: First of all, an effort is made to create products that are designed from the development stage to have the least possible environmental impact. We also make the manufacturing process at the manufacturing site as environmentally-friendly as possible, starting with green procurement. In the logistic process to transport products, as well, we take measures to reduce CO_2 emissions, such as building plants adjacent to ports to implement modal shifts in shipping. We also recommend environmentally-friendly products and use of remanufactured components to our customers in our sales and service activities and at the operating site. Finally, we channel obsolete products for reuse, or for disposal in an environmentally-friendly manner.

In this way, we can ensure that business activities for every aspect of a product's lifecycle are earth-conscious.

— It seems that enhancement of safety needs to be approached from a variety of aspects.

Ohashi: For a manufacturer, safety must be the foremost concern. While customers may say that fuel efficiency is the most important aspect, for us, as a manufacturer, "Dantotsu" (Unique and Unrivalled features) in safety performance will be most important.

The next most important is "Dantotsu" in environmentally friendliness, followed by high efficiency.

When I was a plant manager, I felt that safety must always be given top priority. This should be followed by compliance, product quality, delivery date, and finally cost. That was my order of precedence then, and it is the same even now.

The purpose of a company is to serve all its stakeholders. With that in mind, you must ask yourself is there any meaning to continue production while ignoring safety. This is, in fact, what CSR is all about. You should never attempt to make a product in a workplace where safety is not assured.

Safety is a commitment to yourself, to your family and to your work colleagues. Compliance is a commitment to the local community, and quality is a commitment to the customer. Without these three commitments, a company cannot exist. This is what CSR stands for.

Unmanned dump trucks featuring "Dantotsu" safety performance

— Finally, please describe the situation in Japan after the recent earthquake and tsunami disaster.

Ohashi: First of all, I would like to express my heartfelt sympathy to everyone in the disaster-hit areas.

Komatsu's plants and sales branches and some of our business partners were hit by the disaster and we are making a concerted effort to restore operations with the utmost speed and precision, while also extending assistance to our business partners.

Other tasks requiring quick handling include a review of risk management, drawing on the lessons learned from the earthquake and tsunami disaster, and verification of our production capabilities under the electrical power restrictions that are a consequence of power shortages in the region.

Efforts are underway in the disaster-affected areas to achieve reconstruction at the earliest possible time, with numerous construction machines already in operation. At the same time, Komatsu has introduced radio-operated construction equipment to protect operators from the dangers of nuclear radiation when working in the vicinity of the nuclear power plant accident sites.

While we are proud that our products can play an important role in restoring normal life to the disaster-affected areas, our goal is to continue to supply products that meet society's needs, and conduct business activities that ensure safety and protect the environment.

Special Story 1
KOMTRAX for Accurate Servicing and Reduced Environmental Impact

KOMTRAX adds a GPS antenna and wireless communications technology to Komatsu construction equipment operating anywhere in the world.

KOMTRAX is a remote management system that monitors the "health" and operational status of vehicles. KOMTRAX Plus, designed for use in mining equipment, can collect detailed status information on vehicles and use the data to control mining equipment under severe operating conditions. Using these ICT-assisted systems, Komatsu is improving the quality of service it is providing to its customers and reducing environmental impact.

Supporting our Customers with Remote-controlled Equipment using KOMTRAX

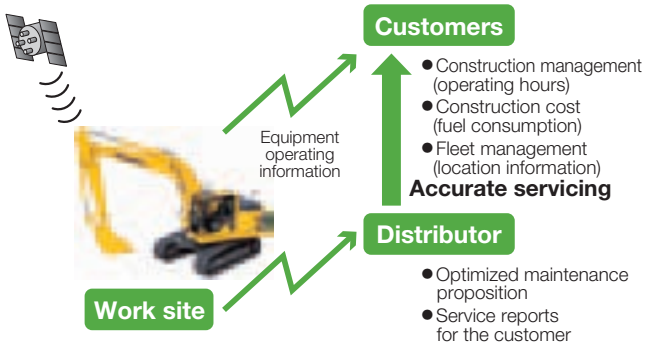
Just as automobiles require regular replacement of the engine oil and oil filter, construction equipment also requires periodic maintenance. However, because construction equipment operates under much harsher conditions, maintenance work must be extremely efficient, to ensure that equipment productivity is stable. Ideally, inspections and part replacement should occur based on the number of operating hours that are logged on the equipment. However, with conventional equipment servicing done by distributors, service personnel must travel to the customer's site to determine the number of operating hours. This results in parts often being replaced too early, or sometimes too late, ultimately causing maintenance costs to rise.

KOMTRAX offers real-time access to equipment information, such as the number of operating hours, the last date a part was replaced, and the next replacement period. This lets service personnel plan timely inspections and part replacement, and allows preventive maintenance measures to be implemented. The result is a steady reduction in maintenance-related waste for the customer, together with reduced maintenance costs associated with this waste.

KOMTRAX information can also be used to devise more efficient ways of operating the equipment, based on the characteristics of the customer's worksite. Selecting more appropriate models and using the equipment more efficiently leads to lower fuel consumption and less environmental impact. Recently, our Fuel-efficient Operation Report, which uses KOMTRAX information to reduce operating costs, has been highly rated.

KOMTRAX became standard equipment on models built for the Japanese market in 2001. As of March 2011, 200,000 vehicles have been equipped with the system world wide.

◆ Machine Management System (KOMTRAX)



KOMTRAX Plus for Mining Equipment Used in Harsh Operating Environments

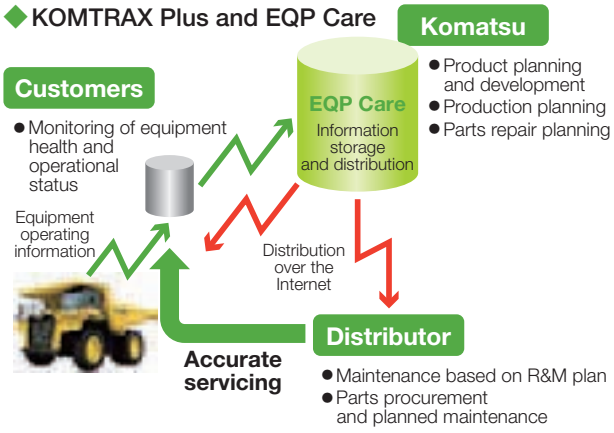
While the KOMTRAX system described above is installed on general construction equipment working in urban environments, KOMTRAX Plus is used on heavy-duty mining equipment operating in large-scale mines and similar sites.

Heavy-duty mining equipment operates at sites where natural resources that support our daily lives, such as coal and iron ore, are extracted. Typically, general construction equipment is moved in relatively short cycles from one operating site to another. However, mining equipment, once is at the mining site, will remain there in full operation, day and night. And this equipment is expected to provide stable operation at all times.

Minimizing idle time due to breakdowns requires planned maintenance and part replacement.

KOMTRAX Plus helps meet the challenges posed by harsh operating conditions.

◆ KOMTRAX Plus and EQP Care



The company began installing KOMTRAX Plus, a system for monitoring the health and operational status of mining equipment, in 2002. Now, approximately 10,000 mining machines have been equipped with the system. KOMTRAX Plus collects data from numerous sensors installed on the mining equipment and provides real-time information (equipment health and operating information) that is used in the operation of this large-size equipment. The information is transmitted via satellite and consolidated in the EQP Care equipment allocation system.

Using the EQP Care system, customers, distributors, local subsidiaries, and Komatsu can access a variety of information about the equipment via the Internet.

In addition to making KOMTRAX Plus data available, EQP Care also consolidates various service and support information for each vehicle. It then makes comprehensive use of this data to propose accurate preventive maintenance measures to the customer. These measures are designed to improve operation rates and optimize overhaul times, to reduce repair costs.

In addition, the system can analyze the way vehicles are used and, based on this data, suggest more efficient operating methods, thus reducing environmental impact by making operation more fuel-efficient.

Voice KOMTRAX Plus Helps Customers Reduce their Fuel Consumption

Mohamad Sholahudin
PT Komatsu Marketing and Support Indonesia [KMSI]

Devi Ari Suryadi
PT Komatsu Marketing and Support Indonesia [KMSI]

Indonesia is rich in mineral resources and plays an important role in supplying the world with coal. A large number of mining machines manufactured by Komatsu are in operation in Indonesian mines, and the role KMSI plays in these developments is growing day by day.

Although Indonesia is a coal-producing country, the cost of fuel for running mining equipment has roughly quadrupled over the past five years. This increase in fuel prices has caused the costs of operating a mining business to swell by nearly 20%, eating into customer profits. Dump trucks, in particular, use a large amount of fuel as they drive up the slopes of a mine, making the high fuel cost for dump trucks one of our customers' biggest headaches.

Even PAMA, our largest customer in Indonesia, has asked us to help them reduce the fuel cost for dump trucks.

To meet this request, we decided to make extensive use of KOMTRAX Plus. After analyzing the data of a dump truck with a payload of 90 tons (our flagship product), Komatsu worked together with its distributors, KMSI, and PAMA to successfully reduce the fuel consumption. The activities that led to this success are described below.

In line with The KOMATSU Way and the importance it assigns to the worksite, we started the process with a field study. We investigated the course taken by dump trucks at the worksite and conducted detailed analyses of the driving methods of operators. After careful analysis of the collected data, we found that we could decrease fuel consumption by using "economy mode" in combination with certain course patterns.

After the field study, we began training activities. Distributors trained operators in driving methods that decreased fuel consumption. PAMA revised its standard operating procedure for mining operations to emphasize to their operators the need for energy conservation.

A strength of KOMTRAX Plus is its capability for visualizing the results of these efforts. A comparison of the fuel consumption before and after the countermeasures clearly shows their effect. PAMA acknowledged that the measures had brought about a reduction in fuel consumption in this particular case, but they also expressed the hope that Komatsu will be able to generally improve the fuel efficiency of its equipment.

In response to this request, Komatsu developed a fuel economy kit for dump trucks. This kit is currently being installed on dump trucks of the same type in Indonesia and is producing good results.

Our goal is to continue approaching our customers with various proposals for improvement using KOMTRAX Plus, including measures to reduce fuel consumption, and thereby contribute to increasing the satisfaction of our customers.

Discussion with PAMA operators about the fuel-saving operation based on KOMTRAX Plus data

Special Story 2
Development Story of Tier4-compliant Vehicles/Engines

Since 1996, the exhaust emission regulations applicable to construction machinery in Japan, the U.S.A. and Europe have become increasingly severe every five years, and from 2011, will enter into a stage with coming into force of the Tier4 regulations.

What was required was advanced technology that would make it possible to make exhaust gas "cleaner" and improve fuel efficiency. On the occasion of writing this report, we asked members of the Research and Development divisions who helped to overcome this hurdle to tell us about their passionate involvement in their work.

Emissions Standards for Japan, the U.S.A. and Europe (See page 12)

Vehicles with Tier4-compliant Engines

The Road to Tier4-compliant Hydraulic Excavators and Improved Fuel Efficiency (Reduction of CO_2)

Seiichi Fuchida, Group Manager
Research Division, Construction Equipment Development Center 1, Hydraulic Excavator Development Group

The following are the main issues faced in the development of Tier4-compliant vehicles:

(1) Improvement in engine exhaust heat rejection
(2) Space required to mount exhaust gas treatment equipment
(3) Creation of control logic for the exhaust gas treatment equipment
(4) Improvement in fuel efficiency

In earlier research, Komatsu confirmed the performance of Tier4 test vehicles after benchmark tests and tests of Tier3 vehicles. Tests were conducted under different climatic conditions, such as at high altitudes and in extreme cold, and assuming various loads. Tier4-compliance and improved fuel efficiency (10% lower than conventional equipment) were confirmed in the earlier research. A method for evaluating fuel efficiency was also established, so that our customers could actually see that they are saving fuel.

We encountered considerable difficulties in our development trying to satisfy the requirement for improved fuel efficiency. At the same time, we encountered problems that had not been experienced, such as freezing of the intake circuit and soot (PM) formation due to incomplete combustion by the Tier4-compliant Komatsu disel particulate filter (KDPF). However, regardless of how imposing the problems were, we overcame it by mustering all our resources.

I think this was due, firstly, to Komatsu's technical capabilities and, secondly, to those who uphold the company's corporate tradition. Our quest for environmentally friendly products will never stop.

Keeping this in mind, we will continue to focus our efforts on development.

PC220/PC240LC-10 hydraulic excavator

Development of Bulldozer D65-17 (Tier4-compliant)

Kazushi Nakata, Team Leader
Research Division, Construction Equipment Development Center 1, Small Equipment Development Group

The D65-17 inherited the low fuel consumption (5% lower than conventional equipment) achieved with the D65-16, and has been further developed to incorporate ICT (Information Communication Technology) and to feature higher environmental compatibility and safety.

We modified the engine in various ways, for example, by adding exhaust gas aftertreatment equipment and a variable geometry turbocharger. We tried not to compromise the vehicle's performance, including its acceleration, responsiveness, and fuel efficiency. To confirm that the exhaust gas aftertreatment equipment works normally under different conditions, we conducted various environmental assessments, including high altitude tests in Nagano Prefecture and low temperature tests in Rikubetsucho, Hokkaido.

D65-17 bulldozer

This was followed by renewed testing of the control system, and included hardware fixes. Although our development schedule was tight, we were able to start mass production with minimum delay, thanks to the cooperation of all the development centers and manufacturing staffs.

The Road to Improved Fuel Efficiency (Reduction of CO_2) on Dump Trucks

Hitoshi Nakanishi, Team Leader
Construction Equipment Development Center 2, Dump Truck Development Group

With the articulated type dump truck HM300-3, we developed a product that has exceptionally low fuel consumption (8% less than conventional equipment), while being able to handle the same work load as the conventional dump truck. On top of this, the product features lower-noise, environmentally friendly operation.

To achieve this, we needed to use a variable piston pump to efficiently control the engine rpm and torque, as well as the hydraulic pressure. It took repeated tuning sessions to achieve maximum performance for the dump truck and to complete the development.

Onscreen eco guidance as a visual aid helps improving fuel efficiency.

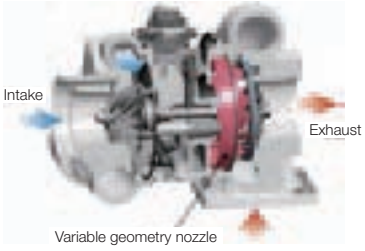
HM300-3 articulated type dump truck

Tier4-compliant Engines

Developing Engines Compliant with New 2011 Emission Standards

Yoshimi Tamura, Senior Manager
Development Division, Engine Development Center, Planning Office

Compared with Tier3, Tier4-compliant engine is required to reduce soot (PM) emissions to one-tenth, so the Tier4 emission standard is a very stringent requirement that cannot be met simply by extending the technology used for the transition from Tier2 to Tier3. Technology used in existing on-road trucks cannot be applied to construction equipment, so we devoted considerable time and effort to develop an aftertreatment device and a variable geometry turbocharger to reduce soot (PM) emissions. Leveraging Komatsu's in-house vehicle and engine development and production capabilities, we laid out a detailed set of check items and succeeded in developing a product that was differentiated from our competitors' products.

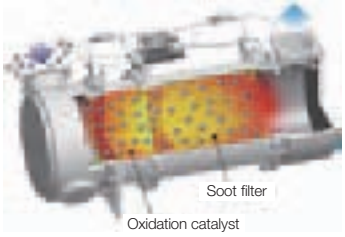


Variable Geometry Turbocharger

Challenge to Develop Tier 4-compliant Komatsu Disel Particulate Filter (KDPF)

Shinichiro Inoue, Team Leader
Research Division, Construction Equipment Innovation Center 3
Component Technology Unit 2

Having had experience in marketing tunnel construction machinery equipped with the KDPF since before the time of the Tier3 emission standards, Komatsu was initially under the impression that evolving this technology to meet the Tier4 requirements would be easy. But working on Tier4, we soon realized that conditions had changed significantly in comparison with Tier3, because of the drastically lower exhaust gas temperature. The problem we identified was that the soot (PM) collected in the KDPF did not combust naturally during operation but continued to accumulate. To solve this problem we needed to develop of a forced regeneration system that would combust the soot (PM) accumulated in the KDPF whenever it reaches a certain level. Due to these unexpected problems we had to work day and night to meet the deadline.

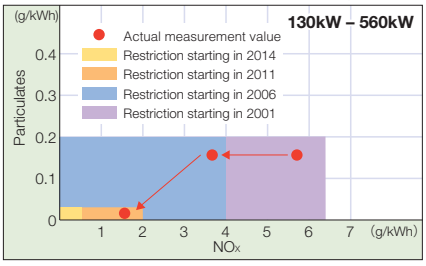


Komatsu Diesel Particulate Filter (KDPF)

◆Emissions Standards for Japan, the U.S.A. and Europe

	Restriction starting in 1996	Restriction starting in 2001	Restriction starting in 2006	Restriction starting in 2011	Restriction starting in 2014
Japan	Restriction starting in H8	Restriction starting in H13	Restriction starting in H18	Restriction starting in H23	Restriction starting in H26
U.S.A.	Tier1	Tier2	Tier3	Tier4 interim	Tier4 final
EU	StageI	StageII	StageIIIA	StageIIIB	StageIV

◆Komatsu's Actual Measurement Values under the Exhaust Emissions Regulation



◆Timetebles for the Emission Regulation of Japan, the U.S.A. and Europe

Restriction starting in 1996 | Restriction starting in 2001 | Restriction starting in 2006 | Restriction starting in 2011 | Restriction starting in 2014

	kW	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Japan	19 – Less than 37	8.0 / 0.80*1				6.0 / 0.40*1						4.0 / 0.03*1		
	37 – Less than 56	7.0 / 0.40*1					4.0 / 0.30*1				4.0 / 0.025*1			
	56 – Less than 75						4.0 / 0.25*1			3.3 / 0.02*1			0.4 / 0.02*1	
	75 – Less than 130	6.0 / 0.30*1				3.6 / 0.20*1				3.3 / 0.02*1				
	130 – Less than 560	6.0 / 0.25*1			3.6 / 0.17*1				2.0 / 0.02*1					
U.S.A.	Less than 19	9.5 / 0.80*2	7.5 / 0.80*2			7.5 / 0.40*2								
	19 – Less than 37	7.5 / 0.60*2				7.5 / 0.30*2					4.7 / 0.03*2			
	37 – Less than 56	7.5 / 0.40*2				4.7 / 0.30*2								
	56 – Less than 75					4.7 / 0.40*2				3.4 / 0.02*1			0.4 / 0.02*1	
	75 – Less than 130	6.6 / 0.30*2			4.0 / 0.30*2									
	130 – Less than 560	6.4 / 0.20*2		4.0 / 0.20*2					2.0 / 0.02*1					
	560 –	9.2 / 0.54*2		6.4 / 0.20*2					3.5 / 0.10*1				3.5 / 0.04*1	
EU	19 – Less than 37	8.0 / 0.80*1			7.5 / 0.60*3									
	37 – Less than 56	7.0 / 0.40*1				4.7 / 0.40*3					4.7 / 0.025*3			
	56 – Less than 75									3.3 / 0.025*1			0.4 / 0.025*1	
	75 – Less than 130	6.0 / 0.30*1			4.0 / 0.30*3									
	130 – Less than 560	6.0 / 0.20*1		4.0 / 0.20*3						2.0 / 0.025*1				

*1: NOx/PM *2: NOx+NMHC/PM *3: NOx+HC/PM (g/kWh)

Pursuing Environmental Management

Komatsu promotes environment-friendly activities throughout the entire Group to realize its vision of "What Komatsu Can Do and What It Must Do" for the environment and the sustainable development of society.

Komatsu's Relationship with the Environment

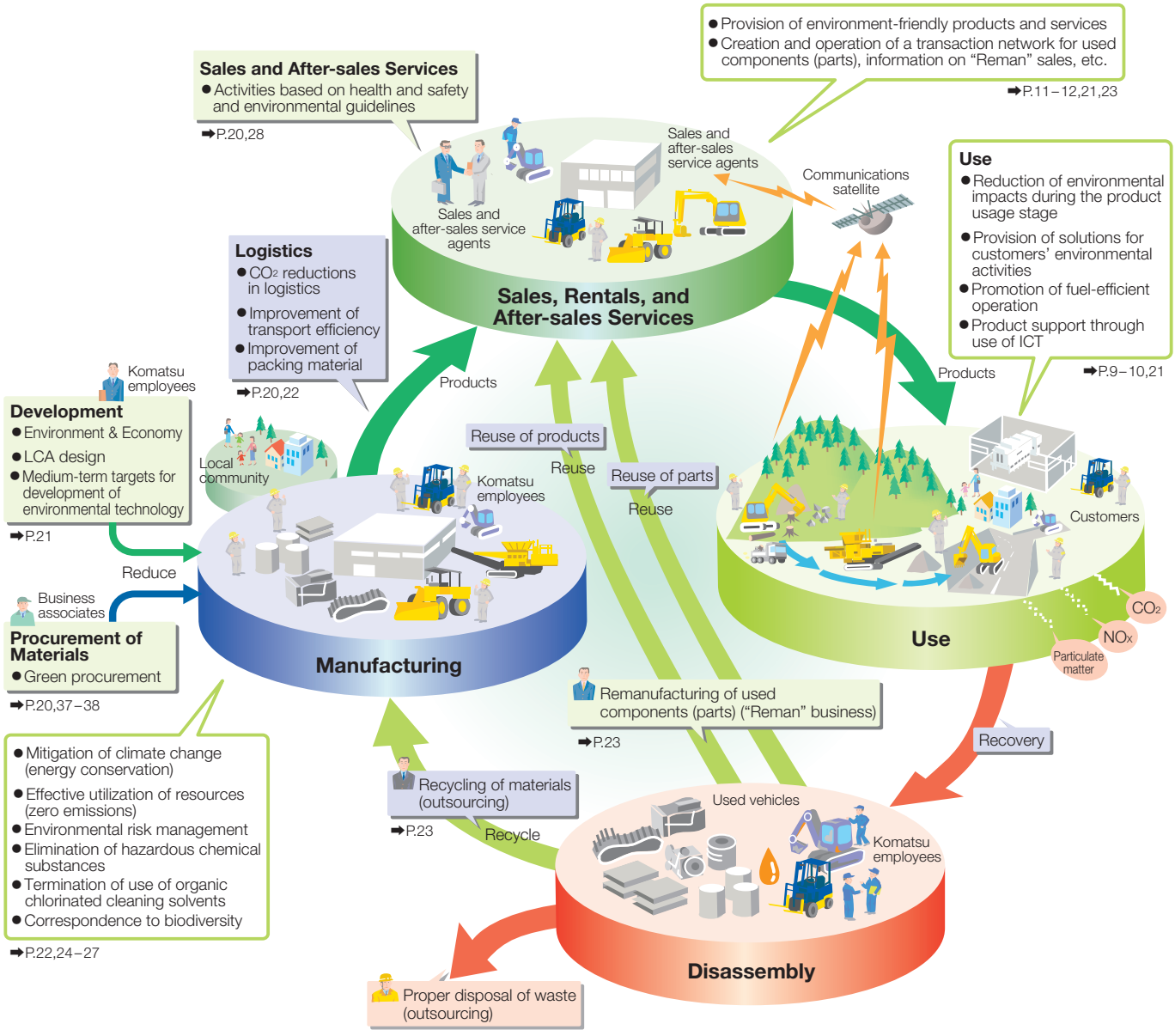
In recognition of the fact that our business activities deeply affect the environment on a regional and global level, we, at Komatsu, have placed the focus on the following four key areas:

1) Climate Change
2) Establishment of a Sound Material-Cycle Society
3) Conservation of Air, Water and Other Environments as well as Management of Chemical Substances
4) Biodiversity

In line with the Komatsu Earth Environment Charter revised in 2010, the Komatsu Group embarks on global initiatives across business areas guided by the fundamental principles of

(1) Contributions to Realization of Sustainable Society,
(2) Simultaneous Realization of Environmental and Economic Performance, and
(3) Observance of Corporate Social Responsibility.

◆Relationship of the Komatsu Group's Business Activities with the Environment



Komatsu Earth Environment Charter (June 2010 revision)

< Corporate Principles >

1. Contributions to Realization of Sustainable Society

Mankind must not only promote the further growth of a rich and comfortable society but also pass down this indispensable environment of our planet earth to future generations in a sound and healthy condition.

We, at the Komatsu Group, define environmental conservation efforts as one of the highest priority management tasks, and endeavor to contribute to the sustainable growth of society by integrating advanced technologies into environmental conservation efforts in all our business activities. This is represented by our hybrid construction equipment which features a substantial reduction of CO_2 emissions while in operation and by our superior manufacturing.

2. Simultaneous Realization of Environmental and Economic Performance

We are committed to improving both environmental performance and economic efficiency, as a group of companies working toward superior manufacturing for customer satisfaction. To this end, we constantly take up the challenge of advancing technologies to develop creative products that improve both environmental performance throughout the product's life cycle and the product's economic performance at the same time.

3. Observance of Corporate Social Responsibility

Each company of the Komatsu Group promotes environmental conservation by not only complying with the applicable laws and regulations of the concerned host community, region and country but also by establishing its voluntary standards which consider global and local environmental concerns. Each company of the Group also strives to fulfill its corporate social responsibility by actively participating in local environmental conservation programs and thereby promoting close-knit communication with local communities, while striving to become a company trusted by all Komatsu stakeholders.

< Guidelines for Corporate Activity >

1. Basic Stances on Earth Environmental Problems

We, at the Komatsu Group, work for sustainable society and earth environment through our global business operations by addressing the following four environmental problems with the stances discussed below.

1) Climate Change

We will reduce the use of energy and emissions of greenhouse gas in all phases of our business activities ranging from research and development, procurement, production and logistics to sales and service as well as in the total life cycle of our products and services.

2) Establishment of a Sound Material-Cycle Society

Through our business processes, we work to minimize the use of natural resources, such as materials and water, promote their re-use or recycle them as much as possible, and expand Zero Emissions from our manufacturing activities around the world. At the same time we ensure the thorough management of waste materials in all our business domains, including our suppliers and distributors. We also continuously work to increase the recyclability rate of products at the time of disposal.

3) Conservation of Air, Water and Other Environments as well as Management of Chemical Substances

We comply with not only local laws and regulations but also with our established standards concerning the conservation of water quality, prevention of air pollution, noise and vibrations.

As much as possible, we also ensure the thorough management of chemical substances for use in our business activities, while continuously reducing the use of potentially harmful chemical substances or replacing them with alternative substances for discontinuation of their use.

4) Biodiversity

We recognize biodiversity as one of the important issues concerning the earth environment, evaluate, understand and analyze impact on it in all our business domains, and work on our tasks according to the criteria of the highest impact and/or the most effective actions.

2. Framework of Global, Group-wide Environmental Management System

The Komatsu Head Office, as well as the manufacturing facilities and main companies of the Komatsu Group, already with ISO certifications, will work to maintain and improve their environmental management system, while other manufacturing facilities and suppliers will also work to establish their environmental management systems and reduce their environmental impact.

The Komatsu Environmental Committee develops environmental action plans and common guidelines for the Komatsu Group. Based on these Group-wide plans and guidelines, each division or company sets up its own mid- to long-term targets, develops and implements specific action plans, reviews them regularly and works to continuously improve them.

3. Environmental Education and Communication

We believe that it is important to enhance the environmental awareness of each and every employee and thereby actively promote environmental awareness and education programs for all employees.

We will gather environment-related information concerning not only our manufacturing facilities but also other related entities, such as major affiliated companies and suppliers, and strive to disclose such information, thereby facilitating proactive communication with all our stakeholders, such as customers, employees, local communities and suppliers and further expanding the content of environmental communication.

Environmental Action Plan and Results for FY2010

To promote the Komatsu Earth Environment Charter, the company formulates environmental action plans (implementation policies) for each field, establishes action targets for each fiscal year, and steadily advances its policies, while following up on their implementation status.

◆Environmental Management

Implementation policies	Objectives for FY2010	Results for FY2010	Medium-and long-term objectives	Future information
1. Strengthen environmental management systems	Integrated certification of Komatsu House Ltd.	●Maintenance for the Integrated Certification of environmental management systems (EMSs) is in progress. ●Integrated certification of Komatsu House postponed to next FY	Acquisition of integrated certification by the Komatsu Group Manufacturing Facilities in Japan	P.19
2. Environmental education and training: Implement the education plan	Draw up and promote the education plan	●Held 13 courses with over 5,200 participants	Continue to organize courses and expand them to overseas locations	P.20
3. Environmental communication: Publish an environmental & social report	Formulate a communication plan and publish the report	●Published the Japanese version in July and the English version in August 2010	Enhance the quality of the content; release report earlier than in previous years	—

◆Research and Development

Implementation policies	Objectives for FY2010	Results for FY2010	Medium-and long-term objectives	Future information
1. Reduce the environmental impact of construction equipment ●Develop low-emission construction equipment	Develop vehicles compliant with Tier4-interim emission standards	●Developed a vehicle equipped with an engine compliant with Tier4-interim emission standards (130 – 560kW) (D65-17, PC220/240LC-10, WA380-7, HM300-3, etc.) ●Introduced an engine oil (low ash oil) developed specifically for KDPF equipped vehicles	Develop vehicles compliant with the Tier4 emission standards effective from 2011 in the U.S.A., Europe, and Japan	P.11 P.12
●Reduce CO_2 emissions from construction equipment (improve fuel efficiency of products)	Reduce CO_2 emissions of equipment compliant with Tier4-interim emission standards (hydraulic excavators: Δ 10% compared to existing models) and hybrid equipment (hydraulic excavators: Δ 25% compared to existing ordinary models)	●Achieved 10% reduction with a hydraulic excavator compliant with Tier4-interim emission standards ●Mass production of hybrid hydraulic excavators (HB205-1 and HB215LC-1)	10% reduction by 2015 compared to the 2007 level for vehicles compliant with Tier4 emission standards(hydraulic excavator) 35% reduction for hybrid vehicle (hydraulic excavator)	P.11 P.21
●Improve the recyclability rate of construction equipment	Achieve 99.5±0.5% for equipment compliant with the next emission standards	●Started indicating the substances contained in canned counterweights (according to the manuals by Japan Construction Equipment Manufacturers Association) ●Adopted chlorine-free hydraulic hoses (changeover underway) ●Established a recycling route for electric double-layer capacitors	Recyclability rate of 99.5±0.5% by 2015	P.23
●Strictly control and reduce substances of environmental concern in construction equipment	Maintain reduction of hazardous substances at 75% compared to 1998	●Achieved 75% reduction using a newly developed vehicle (strict control of continuous use of alminium radiators/rigorous management of packing materials for canned counterweights)	Maintain the reduction of hazardous substances at 75% compared to the 1998 level until 2015	—
	Reduce the use of mercury and lead in vehicles compliant with Tier4 emission standards	●Monitor panel of Tier4-compliant vehicles changed over to a mercury-free LCD panel	—	—
	Introduce a separate hazardous substances control system for each product type (to comply with REACH regulations)	●Conducted surveys of substances by product type in Japan and the EU for mass production ●The control system is being implemented outside Japan (with the exception of the EU)	100% hazardous substances control for parts destined for the EU by May 2011	P.26
2. Reduce the environmental impact of industrial machinery ●Market high-performance AC servo presses	Expand business affiliations for AC servo presses	●Launched more compact AC servo presses	Expand AC servo press sales ratio	—
●Market high-efficiency wire saws for solar cells	Develop minor-change model	●Minor-change model of multi-wire saws for solar cells developed and released to the market	Expand business affiliations for high-efficiency wire saws	P.21
3. Promote reuse and recycling ●Promote the "Reman" business	Expand and promote the "Reman" business	●Reorganized the "Reman" business globally (concentrate operations into ten Reman Centers in regions with a high demand for remanufactured parts)	Promote reuse and recycling through further improvements in recycling-related technologies for parts	P.23

Topics

Biodiesel Fuel Project —Completion of BDF Pilot Plant—

In 2009, the biodiesel fuel (BDF) project was started at the Adaro Mine in Kalimantan, Indonesia. The project provides for cultivation of the jatropha and other plants for production of BDFs and using these fuels to run Komatsu dump trucks in operation at the mine.

At the Adaro Mine, in 2010, Komatsu built a pilot plant for BDF production and a laboratory where the produced BDFs are analyzed to maintain quality. Komatsu, as the manufacturer, will from now on guarantee the quality of the dump trucks running on BDFs at the Adaro Mine.

The project is an example of a business model for local production of a carbon-neutral biodiesel fuel for local consumption. The future objective is to replace 20% of the kerosene consumed by 1,000 dump trucks with BDFs, with the goal of achieving a reduction in CO_2 emissions of approximately 200,000 tons, roughly the equivalent of the CO_2 emitted by Komatsu manufacturing facilities in Japan in the course of one year.

Pilot plant for BDF production

Local staff and the laboratory

◆Manufacturing

Implementation policies	Objectives for FY2010	Results for FY2010	Medium-and long-term objectives	Future information
1. Mitigation of climate change (energy conservation) ● Make 20% improvement by FY2010 in the amount of CO_2 emissions per unit of manufacturing value compared to the FY2000 level at the Komatsu Group manufacturing facilities in Japan	Improve 1% over the previous fiscal year	● Improved 27.0% from the FY2000 level; attained 3.8% improvement over the previous fiscal year ● Curbed total CO_2 emissions by 18% compared to 1990	40% reduction by FY2015 compared to 1990 level 43% reduction by FY2020 compared to the 1990 level	P.22
● Curb total CO_2 emissions to the 1990 level (Komatsu Group manufacturing facilities in Japan)				
2. Effective utilization of resources ● Maintain or make further progress in attaining zero emissions at the Komatsu Group manufacturing facilities in Japan	Attain a recycling rate of 99% or greater	● Attained a recycling rate of 99.0% across the Komatsu Group	By FY2015, Japan: Attain a recycling rate of 99.5% or greater Overseas: Attain a recycling rate of 95% or greater	P.24
● Achieve a reduction of more than 15% by FY2010 in the amount of waste generated per unit of manufacturing value compared to the FY2005 level at the Komatsu Group manufacturing facilities in Japan	Improve more than 15% compared to the FY2005 level	● Achieved 38.8% reduction in the amount of waste generated per unit of manufacturing value over the FY2005 level	20% reduction by FY2015 compared to the 2005 level	P.24
● Achieve a reduction of more than 10% by FY2010 in the amount of water used per unit of manufacturing value compared to FY2005 at the Komatsu Group manufacturing facilities in Japan	Improve more than 10% compared to the FY2005 level	● Achieved 30.3% reduction in the amount of water used per unit of manufacturing value over the FY2005 level	25% reduction by FY2015 compared to the 2005 level	P.24
3. Environmental risk management ● Implement voluntary reductions in the release of chemical substances Substitute reductions in the amount of VOCs released, which account for the majority of chemical substances released	Establish a control system for chemical substances and reduce the amount of released chemical substances	● Achieved 48.7% reduction in the amount of VOCs released per unit of manufacturing value over the FY2005 level	50% reduction compared to the FY2005 level	P.26
● Implement voluntary reductions in VOCs Achieve reductions of more than 20% and 50% by FY2008 and FY2010, respectively, in the amount of VOCs released per unit of manufacturing value compared to the FY2005 level				
● Undertake soil and groundwater remediation at the Komatsu Group manufacturing facilities in Japan	Continue the cleanup	● In progress	Complete the cleanup work	P.25
● Sequentially address each underground tank that has been in operation for 20 years or more at the Komatsu Group manufacturing facilities in Japan	No applicable underground tanks	● No applicable underground tanks	Sequentially address each underground tank that has been in operation for 20 years or more	P.25

◆Procurement and Logistics

Implementation policies	Objectives for FY2010	Results for FY2010	Medium-and long-term objectives	Future information
1. Green procurement ● Promote improvements at suppliers through the establishment of environmental management systems and by specifying matters that require environmental consideration	Provide guidance and support to member companies of the Komatsu "Midori-kai" for acquiring integrated certification of their environmental management systems (EMSs)	● Certification acquired within FY2010: 17 out of 17 member companies acquired certification (equal to the target)	Reinforce linkages with supplier EMSs	P.20
2. Environmental conservation in logistics ● CO_2 emissions per unit of net sales generated through shipping of products and components (Komatsu manufacturing facilities in Japan) (in the scope of revised Law concerning the Rational Use of Energy of Japan)	Improve by 14.4% over the FY2006 level	● Improve 10.7% over the previous fiscal year ● Achieved 38.0% improvement compared to FY2006	Improve CO_2 emissions per unit of net sales generated through shipping of products and components by 30.6% by FY2015 compared to the 2006 level (Komatsu manufacturing facilities in Japan)	P.22
● Shift to means of shipping with low environmental impact	Promote modal shifts in shipping from trucks to inland ferries or rail	● The Oyama and Koriyama Plants are increasingly emphasizing a shift to Japan Railway containers, raising the modal shift ratio to 3.6%. At the same time, Komatsu's overall modal shift ratio (including the use of domestic vessels) falls on 23.9%, remaining on the same level	Continue to promote modal shift	—
● To save resources, aim at reducing procurement of new packaging materials to zero and make all shipping containers returnable	Increase the packaging return ratio	● The Awazu Plant is focusing on the use of specially designed packaging for containers and has improved the packaging return ratio by 9.4%. The total packaging return ratio for shipments within Japan accounts for 45.1% of all export packaging	Reduce procurement of new packaging material to zero	P.22
● Promote reduction in shipping distances and improvements in shipping efficiency	Increase the size of shipped units to large lots	● Improved the cargo weight per shipment index by 13.1% by loading containers directly at the plant, improving the load ratio, increasing production at plants adjacent to ports, increasing the number of self-propelled vehicles and similar measures (11.6 tons/shipment -> 13.1 tons/shipment)	Promote these efforts with a focus on components	P.22
	Using nearby ports to shorten shipping distances by trucks	● The distance per shipment using truck trailers (average haul distance) was reduced by 13.3% (183 km/shipment ⇒158 km/shipment) across the Komatsu Group. Transfer of production to the Ibaraki and Kanazawa Plants, which are adjacent to ports, is ongoing to reduce shipping distances	Implement further improvements, including reducing the operating range of forklifts	P.22

◆Sales and After-sales Servicess

Implementation policies	Objectives for FY2010	Results for FY2010	Medium-and long-term objectives	Future information
1. Encourage Komatsu Group sales agencies and rental companies in Japan to reduce their environmental impact	Enhance awareness of the environment through education and training based on the Group's environmental guidelines	● Carried out activities for improvement through guidance provided during onsite visits to 107 sites ● Regularly issued the Safety and Environment Newsletter (24 editions published yearly)	Support environmental conservation activities by Komatsu Group sales agencies and rental companies in Japan based on the Group's environmental guidelines	P.20

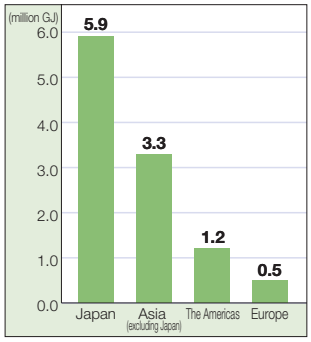
Relationship between Business Activities and the Environment

The Komatsu Group procures various parts and materials and, through the manufacturing process, utilizes the earth's resources, including raw materials, water, energy, and chemical substances, among others, to provide products to customers. Such business activities impact the environment at each stage in the process.

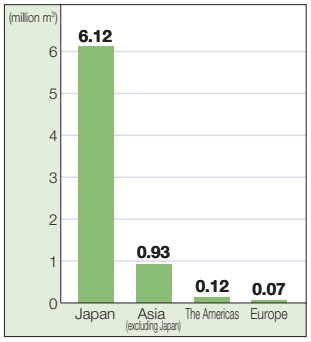
The Komatsu Group will continue to provide more highly value-added products and services while assessing the environmental impacts resulting from its business activities, formulating medium- and long-term objectives, and introducing measures to reduce such impacts.

◆Environmental Impact Indicators by Region

Energy



Water Resources



◆Environmental Impact Resulting from Business Activities of Komatsu Group Companies, including Facilities outside Japan (FY2010)

Input

Direct Materials	
Steel	938,591t
Indirect Materials	
Paints	1,225t*1
Lubricants	14,873kℓ*1

Energy	
Electricity	815GWh
Heavy oil A	13,000kℓ
Kerosene	6,000kℓ
Light oil	10,000kℓ
Natural gas	16million Nm³
LPG	7kt
Gasoline	500kℓ
LNG	14,000Nm3
Steam	33kt
Other	5MWh

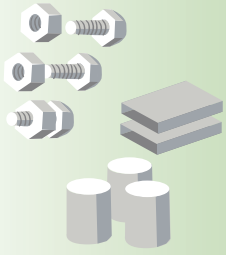
Water Resources	
Groundwater	5.9million m³
Industrial water	0.3million m³
Supply water	1.0million m³

Development

- Ecology & Economy
- LCA design
- Medium-term targets for development of environmental technology

Procurement of Materials

- Green procurement



Manufacturing (36 Komatsu Group Manufacturing Facilities in and outside Japan)

- Mitigation of climate change (energy conservation)
- Effective utilization of resources (zero emissions)
- Environmental risk management
- Elimination of hazardous chemical substances*1
- Termination of use of organic chlorinated cleaning solvents*2

Environmental Risks (Air, soil, and groundwater pollution)	
Measures for underground oil tanks	0unit*2
Storage for PCB transformers	476units*2
Groundwater observation wells	123wells*2
Company on-site landfills	Closed

Product

Product weight (construction, mining and Industrial equipment) 1,619kt

Number of products (construction, mining and Industrial equipment) 75,811vehicles

Output

Waste	
Total amount generated	112kt
Substances under the Pollutant Release and Transfer Register (PRTR) Law	98.5t*2
(Waste furnaces	1 unit stopped)

Waste Recycling	
Recycling amount	98kt

Use in other industrial sectors

Hazardous waste manifests

Waste Disposal	
Waste materials disposed by subcontractor	14kt
(Company on-site landfill of waste materials	0kt)

Atmospheric Discharges	
CO_2	561kt-CO_2
SOx	69t
NOx	177t*2
Substances under the PRTR Law	571.6t*2

Noise and vibration

Water-based Discharges	
Wastewater	5.7million m³*2
BOD emissions	27t*2
COD emissions	18t*2
Substances under the PRTR Law (public water areas)	0t*2
Substances under the PRTR Law (sewerage)	0t*2

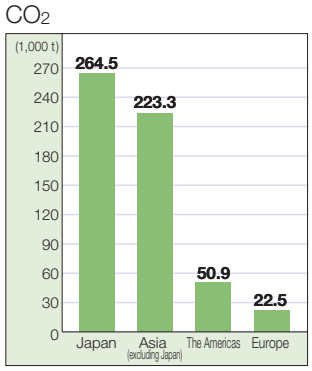
CO_2 emissions: Calculated by multiplying the electric power, heavy oil, etc. consumed (see Energy section of Input column) by the CO_2 emission coefficient (according to the Greenhouse Gas Emissions Calculation - Reporting Manual of the Ministry of the Environment based on the Act on Promotion of Global Warming Countermeasures)

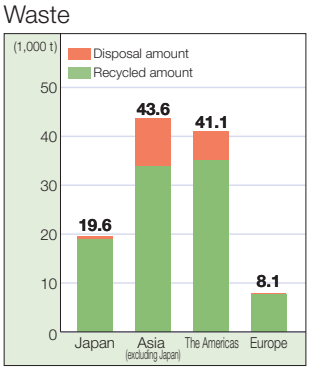
SOx emissions: Calculated by multiplying the "S content by percentage" (based on element tables of suppliers) by the amounts of heavy oil, kerosene, light oil, and coke used.

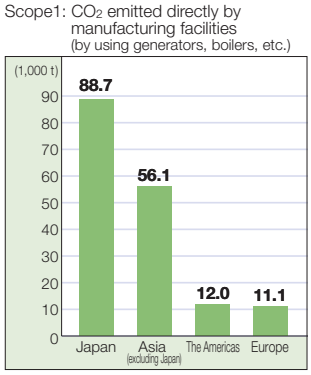
NOx emissions: Calculated by multiplying the "nitrogen oxide emissions units" (obtained at each Komatsu facility) by the amounts of heavy oil, kerosene, light oil, natural gas, and LPG used.

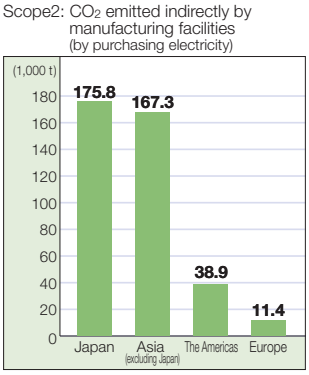
Emissions and transfer of substances covered by the PRTR Law: Calculated by the "content ratio of specific chemical substances" contained in indirect materials multiplied by the "discharge or transfer rate." This calculation is based on the PRTR Law, which was designed to mandate the disclosure of the amount of specific chemical substances released into the environment to promote the management of such substances.

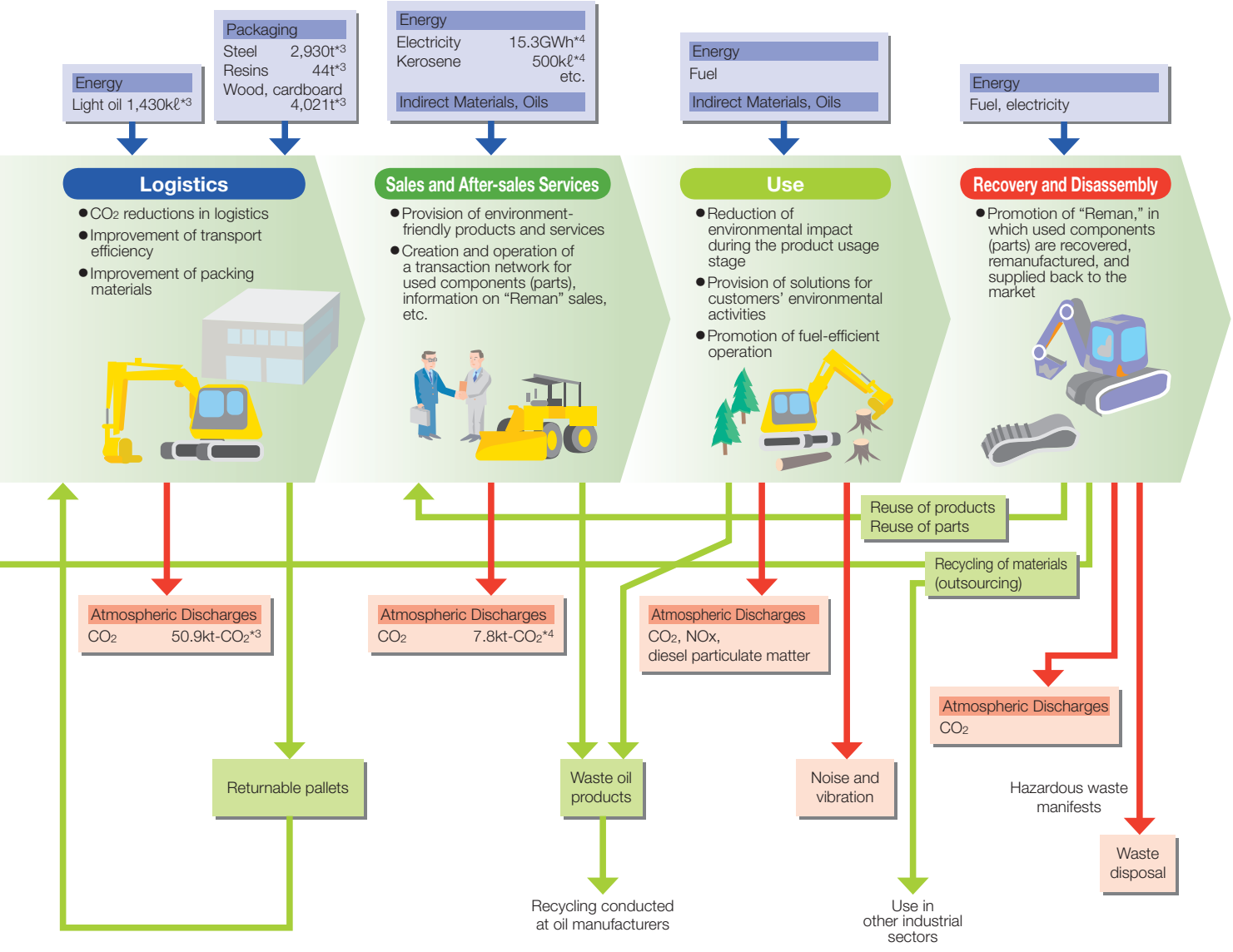
CO_2 Emissions by Scope





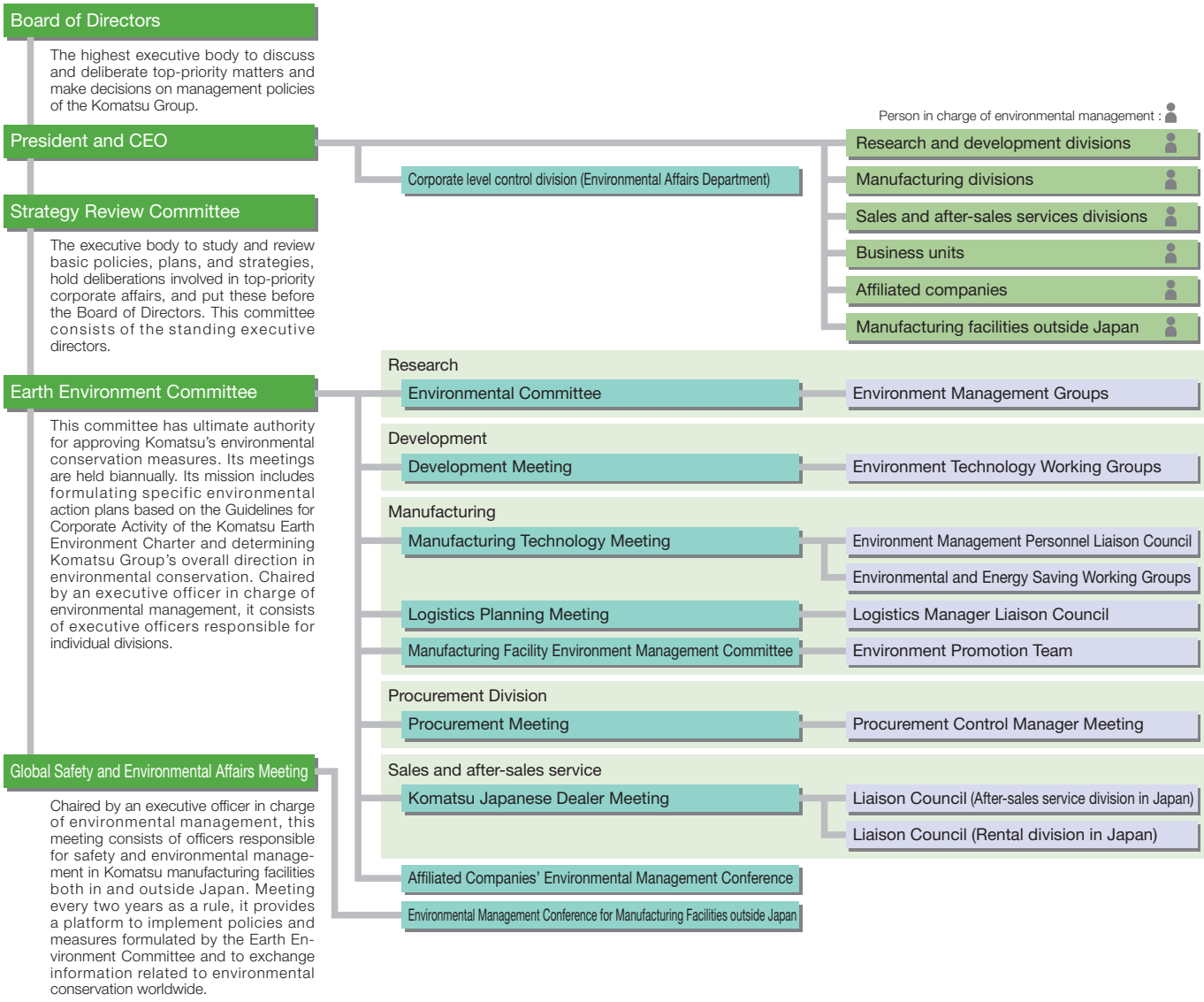






Coverage of Data *1 : 7 Komatsu manufacturing facilities in Japan
*2 : 12 Komatsu Group manufacturing facilities in Japan
*3 : Logistics from procurement to sales related to construction equipment in Japan
*4 : Sales agencies and rental companies in Japan
(Komatsu Construction Equipment Sales and Service Japan Ltd. and Komatsu Rental Ltd.) were added

Organizational Chart of the Environmental Management Structure



Acquiring ISO14001

Komatsu has implemented a Group-wide initiative to acquire ISO14001 certification, an international standard for environmental management systems. The objective is to enhance management quality by strengthening systematic steps towards environmental conservation.

Since 1997, several manufacturing facilities both inside and outside Japan, received certification. In FY2005, the four plants belonging to Komatsu Ltd. (the parent company), the Awazu, Osaka, Mooka, and Oyama Plants, acquired integrated certification, As the second step, in FY2007 Komatsu added its major affiliates in Japan and yet-to-be-certified non-manufacturing facilities – notably the Head Office – to the above four plants, with integrated certification attained by the Group in Japan in May 2008.

Upon completing the April 2010 surveillance audit, Komatsu NTC Ltd. (Toyama and Fukuno Plant) was included in the integrated certification. The Group seeks to further expand the scope of its integrated certification in the future to cover its affiliates in Japan.

Four manufacturing facilities outside Japan, BKI (Bangkok Komatsu Industries Co., Ltd.), KUI (PT Komatsu Undercarriage Indonesia), Hensley (Hensley Industries, Inc.), and KIPL (Komatsu India Pvt. Ltd.) acquired certification in FY2009. Other manufacturing facilities overseas are also being encouraged to acquire ISO certification.

ISO14001 Integrated Certification

Global Logistics Meeting

The enactment of the revision to the Law concerning the Rational Use of Energy of Japan in FY2006 made Komatsu to promote more and more implementing measures to reduce CO_2 emissions associated with its logistics operation that had been implemented by desterilizing returns and joint transpotation with competitors. Starting in FY2011, these activities will be expanded to a global scale. In preparation for this expansion, a Global Logistics Meeting was convened in FY2010 to assess the status of CO_2 emissions and make improvements in logistics processes. Work started with assessing the CO_2 emissions of ten major overseas production facilities in the U.S.A., U.K., Germany, Brazil, China, Indonesia, and Thailand. Transport-related CO_2 emissions were calculated using the improved ton-kilometer method, resulting in detailed transport data comparable to that available in Japan. This was used to visualize the status and to make improvements.

Global logistics meeting
(at the Komatsu Head Office)

Environmental Education and Training

In Komatsu Group's basic education system, the parent company and individual divisions share the responsibility for education. The parent company develops educational materials and provides educational services on relevant academic issues for use by Komatsu Group companies. Individual divisions, on the other hand, provide instruction on more hands-on matters, including unique features particular to the individual divisions. Education and training is tailored to different occupational content, and includes lectures on the environment.

The FY2010 curriculum for environmental education was essentially the same as for FY2009. Special emphasis was placed on learning about environmental laws and regulations in relation to environmental risk management. Komatsu created its own textbook for teaching environmental laws and regulations, and dispatched a lecturer from inside the Company to teach the course at each business unit. To date, more than 200 employees have taken the lecture. In FY2011, the Company embarked on an awareness campaign for employees, to drive home the importance of conserving biodiversity.

Komatsu encourages employees to obtain an appropriate environment-related certificate that is recognized by public institutions.

Environmental Inspection at the Komatsu Subsidiary in India

Komatsu has established environmental protection guidelines, which are based on the Komatsu Earth Environment Charter, to improve the level of environmental conservation and reduce environmental risks in developing countries. After visiting subsidiaries in China in 2007, and Thailand and Indonesia in 2009, in this fiscal year Komatsu representatives visited two subsidiaries in India to inspect environment-related facilities and exchange views on environmental matters. The inspections also included the local waste disposal companies that the subsidiaries use. The representatives found that each of the business units was practicing energy savings, carrying out air and water quality measurements and waste separation, and had increased the ratio of green space on their plant premises. Moreover, there were no indications of serious environmental risks. Komatsu plans to continue environmental inspections in developing countries into the future, to raise the level of environmental protection for the Komatsu Group as a whole.

Measurement for exhaust gas emissions from the electrical generator
(in Komatsu India Pvt. Ltd.)

Environmental Audit of Chinese Subsidiaries

Komatsu performs internal audits using the audit departments of regional headquarters (RHQs). In FY2010, three Chinese subsidiaries underwent environmental audits by Chinese auditors, with support from the Komatsu Head Office. The Head Office prepared check sheets, which were used to examine ISO14001 activities and observance of environmental regulations. The audits were performed under the guidance of an environmental expert from the Head Office to help reduce environmental risks and improve the level of the local auditors. Environmental audits at RHQs in countries other than China are planned in the future.

Supporting Environmental Activities at Komatsu Group Sales Agencies and Rental Companies

Komatsu supports environmental activities at group sales agencies and rental companies through education and guidance on ways to enhance their environmental management.

The Environmental Guidelines, distributed in April 2005, comprise points and standards that should be observed in relation to environmental issues that are of direct relevance to operations at sales agencies and rental companies. These include waste treatment, waste oil treatment, oil and grease management, and treatment of wastewater from vehicle washing. Komatsu assists sales agencies and rental companies in meeting the provisions of the Environmental Guidelines.

The Company also assists in the review of the environmental aspects of operations, conditions, and equipment at the relevant business sites of the agencies and companies, gives on-site guidance, and proposes remedial actions that are tailored to each site. This is done through joint visits to each of the sites by persons in charge of environmental management at Komatsu and at the sales agencies and rental companies. (In FY2010, 107 sites received this assistance.) As a result, awareness of the environment has risen at the agencies and companies and various improvements are underway.

Supporting Suppliers in Introducing Environmental Management Systems

To reinforce environmental management at our suppliers, Komatsu required the Komatsu "Midori-kai" group, which accounts for about 80% of the value of procurements, to have all its group companies acquire EMS certification. By FY2008, all 126 business associates in Japan had acquired EMS certification.

Of new member companies, 28 companies acquired certification between FY2009 and FY2010.

Mitigating Climate Change

Komatsu is reducing CO_2 emissions generated by its business activities while delivering products that help customers promote their environmental activities.

Mitigating Climate Change through Products and Services

Introducing a New Type of Hybrid Hydraulic Excavator to World Markets

The new HB205-1 hybrid hydraulic excavator features 25% higher fuel efficiency than the PC200-8, which is equipped with a conventional engine. This has earned it certification as a low-carbon emission construction machine by the Ministry of Land, Infrastructure, Transport and Tourism. The new hybrid model's clean engine meets the U.S. Environmental Protection Agency's (EPA) Tier3 emission standards. In addition, it was designated by the Ministry of Land, Infrastructure, Transport and Tourism as an ultra low-noise construction machine, generating 6dB less noise than low-noise machines. All in all, the HB205-1 boasts dramatically improved environmental performance with regard to emissions, fuel efficiency and noise.

HB205-1
hybrid hydraulic excavator

Full Model Change for the WA1200 Super-large Wheel Loader

The WA1200-6, the world's largest mechanical wheel loader, is equipped with an advanced Komatsu engine. Its multi-faceted exhaust emission control system has reduced emission levels of nitrogen oxides (NOx), hydrocarbons (HC), carbon monoxide (CO), and other harmful substances. In addition, fuel efficiency has been improved by 15% (comparing to conventional equipment), by incorporating control features such as controlling discharge rate of the pump or the flow to the hydraulic circuit dependent on the load onto the equipment.

WA1200-6 wheel loader

Thermoelectric Modules

Thermoelectric modules are devices that take advantage of the Seebeck effect – two dissimilar metals are connected, causing a temperature difference at the connection point and current flow between the two metals. Marketing of these devices has started through KELK Ltd.

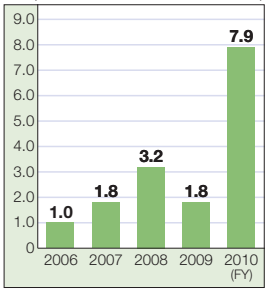
Komatsu had undergone a total of approximately 6,000 hours of verification testing with the heat-treating furnace at the Awazu Plant until January 2011, and is now using the recovered energy for indoor lighting of the plant. If waste heat recovery from plants is widely adopted (50% adoption) in Japan, it will bring about a reduction in CO_2 emissions of 1 million tons (Electric conversion: 2.9 $\times 10^9$kWh) annually.

Verification test of the heat-treating furnace at the Awazu Plant

Wire Saws for Solar Cells

Mainstream solar cells are made from thinly sliced silicon wafers. These wafers are manufactured by a machine known as a multi-wire saw, which achieves high precision cutting using a wire moving at high speed. The expansion of solar energy generation has led to an increase in Komatsu NTC's sales of wire saws. The advanced technology contributes to the production and quality of solar cells, and at the same time to the reduction of CO_2 emissions worldwide.

◆ **Wire saw sales rate trend**
(as the rate is 1.0 in FY2006)

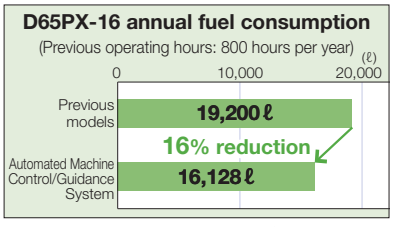


Wire saw for cutting solar cell wafers

Automated Machine Control/Guidance System

An Automated Machine Control/Guidance System refers to a construction system designed to improve the productivity of the overall construction process and ensure quality. This is achieved by applying Information and Communication Technology (ICT) to a series of processes, consisting of surveying, design, construction, supervision, and inspection and maintenance. Equipping construction machines with the Automated Machine Control/Guidance System makes it possible to compare the position information of the machine with three-dimensional design data to support operation of the machine by the operator or to automatically control the machine. Incorporating these features greatly reduces the need for guides and surveying work during construction. It also reduces subsequent corrections, thereby shortening construction periods, improving the operation rates of the construction equipment, and reducing CO_2 emissions. Calculations based on internal test results have shown that the use of one D65PX-16 medium-sized bulldozer will reduce CO_2 emissions by 7.9 tons per year, or in terms of fuel, will help save 15 drums of fuel. After having already made inroads in Japan, the U.S.A. and Europe, Komatsu is currently promoting the system on a global scale.

◆ **Example of fuel consumption reduction effect by Automated Machine Control/Guidance System**



*Effect of the Automated Machine Control/Guidance System on Reducing CO_2 Emissions (effect not guaranteed)

Training on the Automated Machine Control/Guidance System(China)

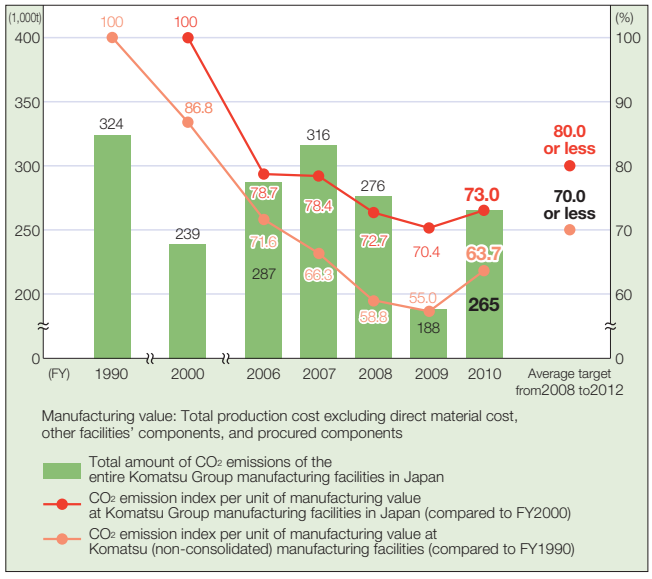
Initiatives to Mitigate Climate Change in Business Operations

Reducing CO_2 Emissions in Manufacturing Operations

As part of its efforts to mitigate climate change, Komatsu has adopted an indicator of CO_2 emissions per unit of manufacturing value with respect to the electricity, fuel gas, fuel oil, and any other type of energy used in the manufacturing operations. The Company has set a target of 20% reduction in CO_2 emissions by FY2010, compared to the FY2000 level.

In 2010, the increased use of energy for air-conditioning during the heat wave aggravated the situation, but the company succeeded in achieving its medium-term target for the fifth year in a row.

◆ CO_2 Emissions



◆ Main Initiatives in the Manufacturing Division

Demand side	Upgrading from old production lines to high-efficiency production lines Strict enforcement of cutting power to equipment not in operation Refining drying processes (shift to low-pressure air blowers) Introducing inverter-controlled pumps and motors Adopting high-efficiency lighting to a greater extent
Supply side	Using high-efficiency heat pumps in air conditioning systems Renewing transformers to amorphous transformers Using power saving control of engine-generators, etc. (Minimum CO_2 Operation)

Komatsu Castex's New Iron Foundry Facility

Komatsu Castex Ltd. is in charge of the Komatsu Group's foundry division. Iron foundry operations account for about 30% of the CO_2 generated by the Group, because of the high heat requirements.

Komatsu Castex Ltd. constructed the new iron foundry facility at the Himi Plant and transferred iron foundry operations from the Oyama Plant. Komatsu Castex is now capable of efficient operation. At the new iron foundry facility, the latest high-frequency melting furnace (IGBT control) was adopted.

50% of the CO_2 related to foundry is generated in the melting process. Using the new melting furnace, CO_2 emissions is reduced approximately 16% per weight in the melting process.

Reducing CO_2 Emissions in Logistics

● Improving Load Efficiency by Increasing Shipped Unit Size to Large Lots

Transport efficiency was improved by dense loading of large-size containers. The reduced number of transport runs resulted in a reduction of CO_2 emissions through the use of logistics. In addition, the use of returnable pallets contributed to the conservation of resources.

Loading engines into containers (Example: PC200 bound for China: load efficiency 98.8%)

● Using Nearby Ports to Shorten Shipping Distances

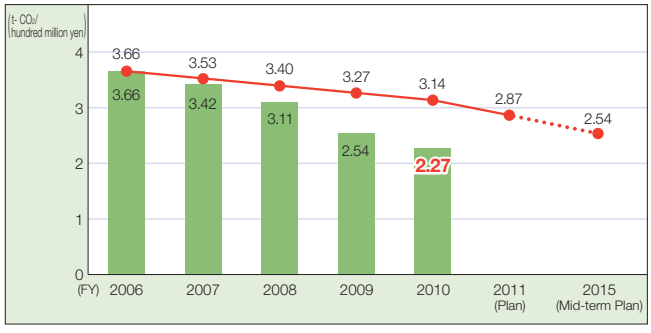
Shipping distances were shortened by transferring production to the Ibaraki and Kanazawa Plants, both adjacent to ports.

(1) The Kanazawa Plant "Shipping distance per unit" 193 km/unit ➡ 56 km/unit (71% of improvement)

(2) The Awazu Plant raised its utilization rate of the Kanazawa Port for component shipments by 11.4%. (Utilization rate of the Kanazawa Port raised from 80.9% to 92.4%)

(3) Transferring production of industrial machinery to the Kanazawa Plant resulted in a reduction of CO_2 emissions equivalent to 422 tons per year.

◆ Targeted and Actual CO_2 Emissions per Unit of Net Sales Generated though Shipping



Reducing CO_2 Emissions in the Non-manufacturing Divisions

With the revision of the Act on the Rational Use of Energy, all Komatsu business units are assessing CO_2 emissions in an effort to achieve reductions. The energy consumption of non-manufacturing divisions, including the Head Office building, the Research Division, and the Field Testing Department, is shown in the table below. Komatsu is proactively moving forward by assessing and reducing CO_2 emissions. These efforts are not limited to Komatsu alone, but are expanding to include the entire supply chain, from business associates to sales agencies and rental companies.

◆ Energy Consumption of Non-manufacturing Divisions (FY2010)

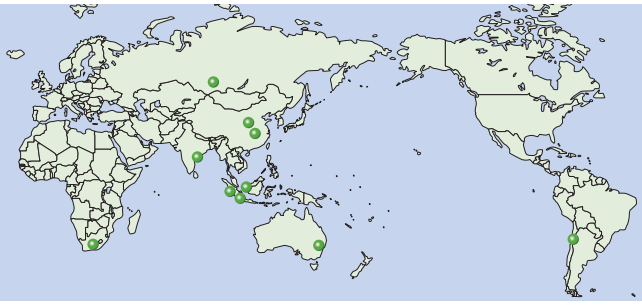
	Komatsu		Main partner companies	Main sales and after-sales services divisions	
	Production (for reference)	Non-manufacturing		Sales of construction equipment	Rental
CO_2 (1,000 tons)	169.2	8.3	118.7	5.1	2.7
Crude oil equivalent (1,000 kℓ)	93.0	4.5	62.8	3.0	1.7

Creating a Resource Recycling Society

Komatsu is helping to create a resource recycling society by promoting the reuse and recycling of used components and by improving the recyclability rate of construction machinery through its Reman business. At the same time, the company is stepping up activities to attain zero emissions at Komatsu Group manufacturing facilities.

Promoting the Reman Business

Komatsu's "Reman" business remakes used engines, transmissions, and other key components (parts) of construction and mining equipment into "remanned" components. These components, which have the same quality as newly manufactured components, are then offered back onto the market. The Group is promoting the "Reman" business at ten Reman Centers around the world, with those in Indonesia and Chile serving as global centers.



"Reman," an abbreviation for "remanufacturing," offers the following advantages to customers:

- **Quality and performance guaranteed to be the same as for new components**
- **Lower cost for "remanned" components**
- **Reduced idle time for construction equipment through sufficient inventory of "remanned" components**
- **Resource conservation and waste reduction through reuse and recycling of components**

The number of Reman Centers was expanded in 2010 by establishing a remanufacturing plant for general construction equipment engines and engine sub-components in Changzhou, China, and facilities in Russia and India for heavy-duty mining equipment component remanufacturing.

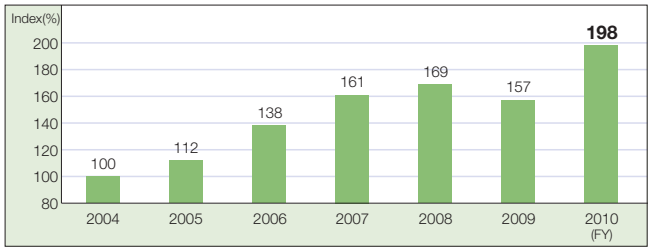
Providing Reman-related Information

The Komatsu Group has set up "Reman-Net" for networking Komatsu Reman Centers around the world. The Group is actively using this network to develop Reman operations for reuse and recycling of components at the global level. IC tags and two-dimensional codes are used to manage an item's remanufacturing history and track quality and durability information. This important information is fed back to the Group, to help develop components with appropriate life spans.

◆ **Reman Process**

Inspection upon receipt
↓
High-pressure cleaning
↓
Disassembly
↓
Component inspection
↓
Component cleaning
↓
Component remanufacturing
↓
Assembly set-up
↓
Assembly
↓
Performance test
↓
Painting
↓
Final performance inspection
↓
Factory shipment

◆ **Changes in Reman Ratios** (base 2004 = 100)



Upper left: KCIS Kuzbass Support Center (Russia) Upper right: Komatsu India Reman (India) Lower left: Komatsu Reman Indonesia (Indonesia) Lower right: Komatsu Changzhou Rebuild Center (China)

Acquiring ISO14001 Certification for Reman Centers

To further environmental conservation efforts, the ten Komatsu Reman Centers around the world have been pursuing ISO14001 certification. Three of the centers have already been certified and the remaining centers are working on obtaining certification. Certified Reman Centers are advancing environmental conservation through daily operations and through inspections for maintaining and renewing their certification.

Future Steps

To further increase the reuse rate of used components (parts), the Komatsu Group is reducing the number of disposed parts by:

- **developing parts with suitable sizes and designs exclusively for future remanufacturing**
- **developing recycling-related technologies (assessment, measurement, high-pressure cleaning, heat treatment, etc.)**

to reduce waste components, and thereby further step up reuse and recycling activities.

Improving Recyclability Rate

Komatsu is moving forward with its changeover from conventional rubber hoses to chlorine-free hydraulic hoses for its construction equipment. Conventional rubber hoses represented a bottleneck in Komatsu's efforts to raise its recyclability rate for construction equipment. This changeover opens the way to raising the recyclability rate to over 99% for hybrid vehicles and for newly developed vehicles that meet the Tier4-interim regulations. This exceeds the target value set by the Japan Construction Equipment Manufacturers Association (97%) and comes close to Komatsu's own voluntary target of 99.5%.

Effective Utilization of Resources in Manufacturing Operations

Waste

In tandem with reducing the amount of waste produced during manufacturing operations, Komatsu conducts zero emissions*1 activities to use waste materials as resources.

The company continued to achieve zero emissions in FY2010 through strict waste separation and utilization of waste materials as valuables*2, boasting a recycling rate of 99.0%.

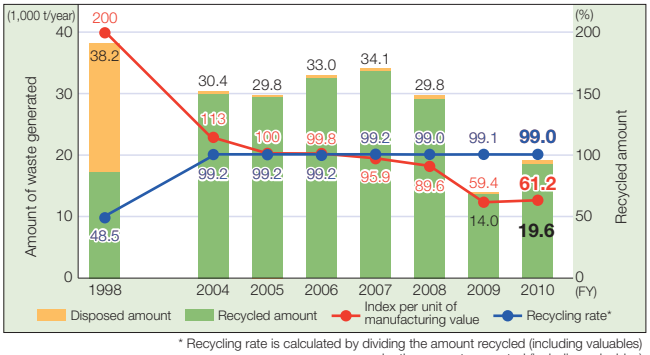
The medium-term target for waste emissions was also attained in FY2010, the last fiscal year falling within this period, with total waste emissions per unit of manufacturing value having decreased by 38.8% compared to FY2005. This dramatic reduction was due to the fact that Komatsu Castex Ltd. made advances in effectively utilizing its waste molding sand.

At the same time, new medium-term targets were established for recycling rates and total waste emissions per unit of manufacturing value at business units in Japan, and new medium-term targets for recycling rates at overseas business units.

This fiscal year Komatsu will encourage mainly its Group companies to practice thorough waste separation, with the aim of achieving the company's new medium-term target.

*1 : Komatsu defines "zero emissions" as a waste material recycling rate of 99% or more.
*2 : "Valuables" in this report refers to materials that can be sold to external companies.

◆Amount of Waste Generated by the Komatsu Group Manufacturing Facilities in Japan



* Recycling rate is calculated by dividing the amount recycled (including valuables) by the amount generated (including valuables).

Water Resources

Since FY2006, Komatsu has set a new medium-term target of achieving by FY2010 a 10% or greater reduction in the amount of water used per unit of manufacturing value, compared to the FY2005 level.

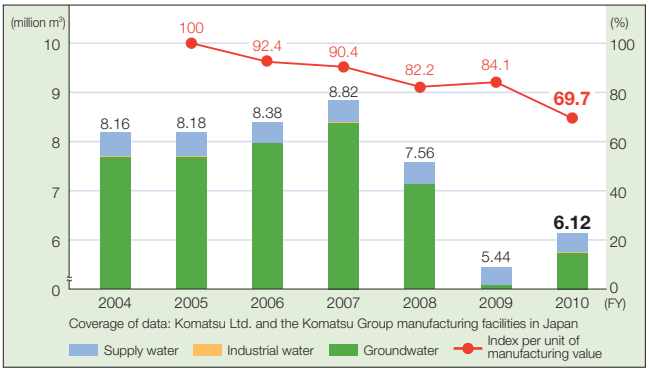
The company has attained this medium-term target by reducing the amount of water used per unit of manufacturing value by 30.3%, compared to FY2005, through the reuse of water during processing and the elimination of wasteful day-to-day practices.

In particular, the Awazu Plant cut back on its groundwater consumption through measures such as assessing the wells from which groundwater is taken and repairing water leakage. As a consequence, they were able to trim water usage by 16% per unit of manufacturing value compared to the previous fiscal year.

The plant also established a new medium-term target providing for a 25% or more reduction in the amount of water used per unit of manufacturing value by FY2015, compared to the FY2005 level.

In the years to come, Komatsu will make further efforts to reduce the amount of water resources used and to achieve its new medium-term target.

◆Amount of Water Resources Used by the Komatsu Group Manufacturing Facilities in Japan

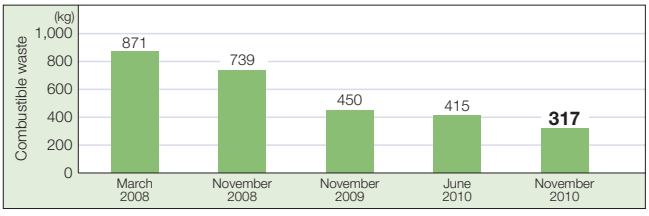


Resource Conservation by Non-manufacturing Divisions

Waste

The Komatsu Head Office is promoting zero emissions and has remodeled its waste containers to make waste separation easier through the use of visual aids. Other steady efforts to recycle resources include the use of recycling boxes and kitchen waste disposal machines. The amount of waste is also being measured at regular intervals. The results showed that a 63.6% reduction has been achieved in the amount of combustible waste, compared to March in 2008 when measurements started. Komatsu also participated in the ECOCAP Movement and collected enough bottle caps to fund vaccines for 348 children in the developing world.

◆Changes in the Amount of Combustible Waste from the Head Office



Topics

The Environment Minister's Commendation awarded to the Oyama Plant

The Oyama Plant embarked on initiatives such as

(1) Introducing high efficiency equipment based on the top management's realization of the importance of saving energy
(2) Issuing a declaration for each employee to reduce CO_2 emissions by 1 kg per day
(3) Having energy conservation patrols make the rounds of the plant to eliminate waste
(4) Setting up a special department in charge of introduction of energy saving equipment.

Thanks to these activities, in which all corporate levels participated, CO_2 emissions per unit of manufacturing value in 2009 were reduced by 41% (compared to 2000), and in FY2010 the Oyama Plant was awarded the Environment Minister's Commendation for its activities to mitigate global warming.


Oyama Plant Manager

Environmental Risk Management

Komatsu is committed to thoroughly implementing measures that mitigate and prevent pollution, in strict compliance with the legal requirements of national and local authorities, to minimize the environmental risks that accompany manufacturing activities.

Promoting Compliance and Pollution Mitigation and Prevention

Komatsu Group companies are responsible for periodically reporting and archiving environmental measurement results, in strict compliance with applicable laws and regulations of national and local authorities. In FY2010, the Komatsu Group experienced a single minor environmental infraction in Japan and corrective measures have been completed for this case. The Group had no major accidents where the environment was polluted in Japan.

Addressing Soil and Groundwater Contamination

Komatsu has established guidelines in Japan for testing soil and groundwater, and performs investigations according to applicable laws and regulations at business units that are to be sold, closed, or demolished. If pollution is found, the Company takes appropriate measures under the supervision of local authorities. Komatsu has also performed voluntary investigations at currently operating business units, to check for contamination from volatile organic compounds compounds (VOCs), which had been used in previous years in cleaning solvents and in other applications. Komatsu has been surveying soil and groundwater for VOC contamination at Group business units in Japan since 2005. All business units where contamination was detected have implemented countermeasures. The Company chose methods that would clean up the sites in as short a time as possible. Work at the Oyama Plant was completed in FY2009. With the demolition and removal of the former Development Center at the Osaka Plant in FY2010, an investigation was carried out according to the Soil Contamination Countermeasures Act and the results were reported to public authorities. The site was declared a so-called "designated lot subject to notification in case of changes", because the levels of lead and other substances exceeded standard values. The notification prescribed by the law was issued, and the required countermeasures have been completed. The history of the detected substances cannot be ascertained, and it is not clear what caused these substances to exceed the standard. Komatsu will continue to take reliable clean-up measures and maintain its monitoring of site boundaries to ensure that groundwater that does not meet environmental standards is contained within the premises.

◆Status of Soil and Groundwater Cleanup in Japan

Business unit	Presence of contamination	Cleanup method	Cleanup status
Awazu Plant	Yes	Excavation and removal, soil vapor extraction, groundwater withdrawal and aeration, bioremediation	In process
Komatsu Plant (formerly)	Yes	Excavation and removal, groundwater withdrawal and aeration, bioremediation	In process
Osaka Plant	Yes	Soil vapor extraction, air sparging, groundwater withdrawal and aeration, bioremediation	In process
Shonan Plant	Yes	Excavation and removal, groundwater withdrawal and aeration	In process
Tochigi Plant	Yes	Excavation and removal, bioremediation	In process

*Surveys revealed no contamination for the Koriyama Plant, Research Division in Hiratsuka, Techno Center in Izu and Field Testing Department in Oita.

Managing PCB Waste

Komatsu conducts appropriate storage and management of PCB waste, such as transformers and capacitors in accordance with Japan's Law Concerning Special Measures Against PCB Waste and its Waste Disposal and Public Cleansing Law. In FY2008, Komatsu began entrusting PCB disposal to the Japan Environmental Safety Corporation (JESCO). A total of 95 PCB-containing capacitors had been disposed of by FY2009. Another 69 capacitors were disposed of in FY2010. When JESCO started its ballast disposal operations at its Kyushu facility, Komatsu re-examined the PCB-containing lamp ballasts, which include fluorescent lamps, used at all its facilities. The investigation revealed that there were approximately 3,300 PCB-containing lamp ballasts in use. These disposal efforts are scheduled to continue in 2011.

Transformers being removed from the Osaka Plant for disposal

◆Number of PCB-containing Transformers and Capacitors in Storage

Company	Site	Number of disposal in FY2010	Number of storage	
			High density	Low density
Komatsu Ltd.	Head office	0	0	7
	Awazu Plant	0	67	112
	Osaka Plant	52	59	59
	Oyama Plant	0	309	6
	Mooka Plant	0	0	5
	Shonan Plant	0	2	1
	Field Testing Department	0	0	3
	Construction & Mining Equipment Marketing Division	0	4	0
Subtotal of Komatsu		52	441	193
Komatsu Utility Co., Ltd.		15	20	11
Komatsu Castex Ltd.		0	0	20
Komatsu NTC Ltd.		0	31	0
Komatsu Cabtec Co., Ltd.		0	2	12
Komatsu House Ltd.		0	1	4
Komatsu Construction Equipment Sales and Service Japan Ltd.		2	18	19
Komatsu Rental Ltd.		0	0	1
Total of Komatsu group		17	72	67
Total		69	513	260

*The Komatsu Plant's share has been transferred to the Awazu Plant. High-concentration waste from Osaka Plant will be disposed of within 2011.
*The former Kawagoe Plant's share is included in the Head office.

Reducing amount of PRTR-related substances and VOC released

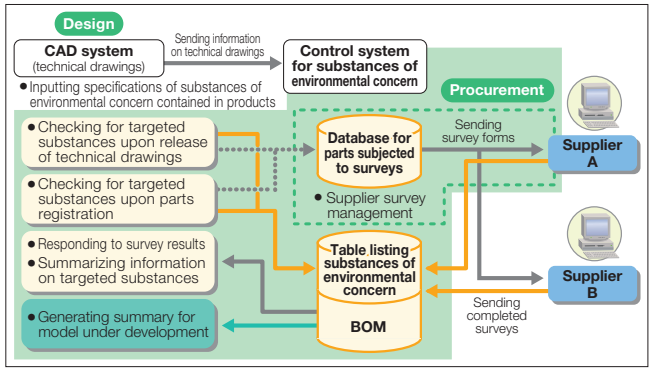
Most of released PRTR-related substances and VOC are VOC used in paint. In FY2010, the amount of such substances released increased as production increased. Komatsu is making efforts to reduce the amount by (1) shifting to high solid paint and (2) improving coating efficiency. (See figures and tables in P26.)

Reducing the Use of Substances of Environmental Concern and Complying with the EU REACH Regulation

Responding to the increase in environmental conservation awareness around the world, Komatsu has been making efforts from an early stage to reduce the use of asbestos, lead, and other substances of environmental concern. In FY1999, Komatsu stipulated its own list of banned substances and substances approved for use only in limited circumstances (see chart right), using as its base the chemical substances banned under Japan's Law Concerning the Examination and Regulation of Manufacture of Chemical Substances Control[*1], as well as other regulations in individual countries. At the same time, Komatsu began comprehensive control of substances of environmental concern. The company has already reduced its dependence on substances approved for limited use, in keeping with its medium- and long-term targets for developing environmental technology.

In response to the enactment of the EU regulation addressing Registration, Evaluation, Authorization and Restriction of Chemicals (REACH[*2]) in 2007, Komatsu reviewed the list of substances approved for limited use and revised the designation of certain substances to "reduced" or "banned," as appropriate. Through cooperation with suppliers, the company has initiated a system to strengthen control of substances of environmental concern in products. This system has been deployed by the corporations in Japan 2009, in Europe 2010, and is planned to be deployed in the U.S.A. 2011.

Control System for Substances of Environmental Concern

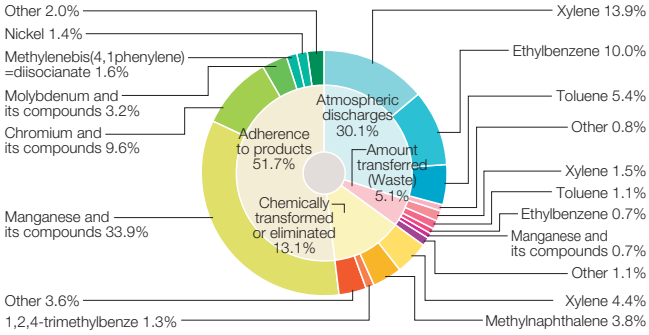


Substances of Environmental Concern Banned or to Be Reduced for Use in ProductsConcern

Designation	Number of substances	Name
Banned	10	• PCBs • Asbestos • Specified chlorofluorocarbons/hydro chlorofluorocarbons (HCFCs) • Trichloroethylene • Triethanolamine • Chromium (VI) • Cadmium • PBB／PBDE[*3]
To be reduced (subject to limited use)	16	• Lead • Mercury • Arsenic • Selenium • Hydrofluorocarbons (HFCs) • Methanol • Hexachlorobenzene • Specified phthalate ester (DEHP/DBP/BBP[*4], DIBP[*5]) • HBCDD[*3] • Specified polycyclic aromatic hydrocarbons • Perfluorooctanesulfonic acid (PFOS) • Specified Organotin Compounds (Tri-substituted Organotin Compounds・DBT・DOT[*6]) • Short chain chlorinated paraffins
Substances of Very High Concern(SVHC) **under the EU REACH regulation**	(46)	Komatsu is currently examining whether to designate the following substances, which might be used in Komatsu products, as substances to be reduced. • Lead arsenate/ diarsenic pentaoxide/ diarsenic trioxide • Triethyl arsenate • DEHP/DBP/BBP[*4],DIBP[*5] • Short chain chlorinated paraffins • Bis (tributyltin) oxide

*1:Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture etc.
*2:REACH(Registration, Evaluation, Authorization and Restriction of Chemicals):
EU regulations for Registration, Evaluation, Authrisation and Restriction of Chemicals
*3:Specified brominated fire retardants
*4:Diethylhexyl phthalate, dibutyl phthalate, benzyl butyl phthalate
*5:Diisobutyl phthalate
*6:Dibutyltin compounds・Triphenyltin compounds

Breakdown of the Amount of PRTR-related Substances Released and Transferred at Komatsu Group Manufacturing Facilities in Japan



Note: Substances handled in quantities of 1 ton or more

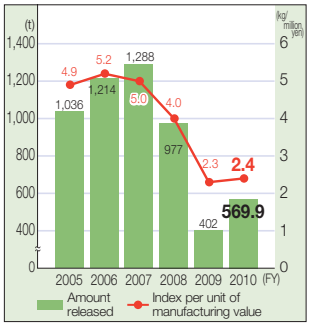
Names of Class I Designated Chemical Substances and the Amounts Released and Transferred by Group Manufacturering Facilities in Japan (handling 1 ton or more)

(unit: t)

Number under the PRTR Law	Name	Amount handled	Amount released				Amount transferred		Chemically transformed or eliminated	Amount contained in products
			Air	Water	Soil	Buried	Sewerage	Waste		
412	Manganese and its compounds	656.5	1.1	—	—	—	—	12.9	—	642.5
80	Xylene	377.1	263.0	—	—	—	—	27.8	83.8	2.5
53	Ethylbenzene	220.7	189.0	—	—	—	—	14.1	17.1	0.5
87	Chromium and chromium (III) compounds	185.0	0.0	—	—	—	—	3.2	—	181.7
300	Toluene	135.8	103.0	—	—	—	—	20.1	9.0	3.7
438	Methylnaphthalene	72.0	—	—	—	—	—	—	72.0	—
453	Molybdenum and its compounds	59.6	0.0	—	—	—	—	0.0	—	59.6
448	Methylenebis(4,1phenylene)=diisocianate	38.9	0.0	—	—	—	—	0.0	8.7	30.2
308	Nickel	27.7	—	—	—	—	—	0.5	—	27.3
296	1,2,4-trimethylbenzene	27.0	2.4	—	—	—	—	0.3	24.4	—
88	Chromium (VI) compounds[*1 *2]	25.1	0.0	—	—	—	—	6.2	—	—
321	Vanadium compounds	21.2	—	—	—	—	—	—	—	21.2
297	1,3,5-trimethylbenzene	9.8	4.2	—	—	—	—	0.7	4.8	—
277	Triethylamine	9.3	1.1	—	—	—	—	0.0	8.2	0.0
132	Cobalt and its compounds	8.5	—	—	—	—	—	0.5	—	8.0
258	Hexamethylenetetramine	8.1	—	—	—	—	—	—	8.1	—
188	N,N-dicyclohexylamine	8.1	0.5	0.0	—	—	—	7.1	0.3	0.2
349	Phenol[*3]	5.7	0.0	—	—	—	—	0.0	5.6	0.1
392	Hexane	5.6	5.6	—	—	—	—	0.0	0.0	—
405	Boron compounds	4.7	—	—	—	—	—	0.2	4.6	—
207	2,6-Di-tert-butyl-4-methylphenol	2.0	—	0.0	—	—	—	1.0	0.0	1.0
71	Ferric chloride	1.2	—	—	—	—	—	1.2	—	—
407	Poly(oxyethylene) = Alkyl ether(Limited to Alkyl carbon numbers 12 to 15 and their compounds)	1.1	—	0.0	—	—	—	0.4	0.8	—
400	Benzene[*2]	0.7	0.0	—	—	—	—	—	0.4	0.3

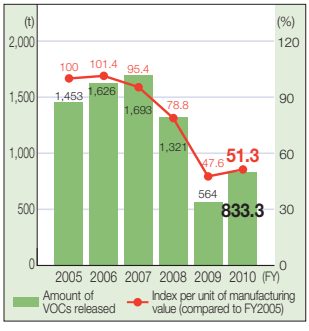
*1: During chrome plating, chromium (VI) compounds become chromium (III) compounds. Therefore, the amount transferred and the amount contained in products are entered under "chromium and chromium (III) compounds."
*2: PRTR Class I Specified Chemical Substances
*3: Although the contained amount of those substances is so little that it is needless to register on PRTR, the amount of releasing them exceeds 1 ton, and we disclose the fact herein.

Changes in the Amounts of PRTR-related Substances Released* at Group Manufacturing Facilities in Japan



*Substances handled in quantities of 1 ton or more

Amount of VOCs Released by Group Manufacturing Facilities in Japan



Biodiversity

Komatsu will remain committed to protecting biodiversity throughout its business activities, fully recognizing that they impact the eco-system.

Initiatives that deal with biodiversity

The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10) was held in Nagoya in October 2010. The conference signaled the increasing importance of maintaining biodiversity and utilizing it in a sustainable manner on a global scale.

With the establishment of Komatsu's "Declaration of Biodiversity" and "Biodiversity Guideline" in January 2011, business units worldwide embarked on activities designed to preserve biodiversity.

Komatsu and Biodiversity

Komatsu understands that its business activities depend on biodiversity and impact it at the same time. And Komatsu is promoting its initiatives to preserve biodiversity on two levels.

First, the Company continues to promote ongoing efforts to reduce the environmental impact of Komatsu's business activities. Komatsu has also made it mandatory to consider biodiversity when deciding how land is to be used, for example, when building factories.

Second, Komatsu is getting directly involved in preserving biodiversity, and at the same time expanding its "one site one theme activities" to raise employees awareness of the need to preserve the ecosystems that are indigenous to a region.

Declaration of Biodiversity by Komatsu

Komatsu recognizes that its business activities are dependent on and influence benefits from the ecosystem services through biodiversity. Based on this understanding, Komatsu takes actions in accordance with the following guidelines as it shares a sense of responsibility regarding the biodiversity crisis, and strives to conserve diverse resources and engage in the sustainable use of biodiversity.

I. Recognition by Management
Komatsu recognizes that conservation and promulgation of biodiversity are important management tasks.

II. Activities
Komatsu shall promote activities by basically integrating climate change problems through the following two perspectives.

1. Komatsu shall reduce its environmental impact, which is affecting biodiversity, through its business activities.
   1) Reduction of environmental impact from products
   2) Reduction of direct environmental impact in the lifecycle of products
   3) Consideration of biodiversity when using land
2. Komatsu shall work for conservation and promulgation of biodiversity through its social contribution activities.

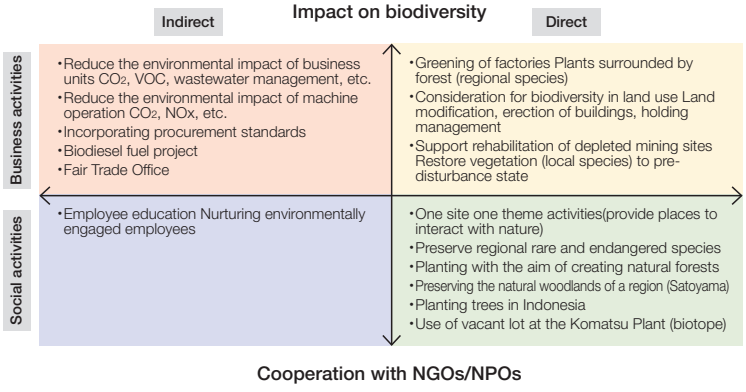
III. Promotion
After considering realistic possibilities, Komatsu shall promote activities by means of a step-by-step approach.

IV. Collaboration with Local Communities
To conserve local biodiversity, Komatsu shall collaborate with municipal authorities, local residences, NGOs and other pertinent groups; promote activities; and work to become a company of which local communities can feel proud.

V. Involvement by All
To foster the growth of employees with a mindset of biodiversity, Komatsu shall promote activities by having all employees involved. Accordingly, Komatsu shall promote such activities on a global and group-wide basis by having not only suppliers, but also customers involved.

VI. Communication
While working to educate its employees in the field of biodiversity, Komatsu shall actively disclose its efforts regarding biodiversity and thereby enhance social awareness of biodiversity.

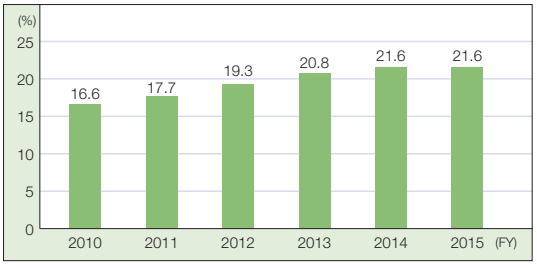
◆Positions of Komatsu's Each Activity



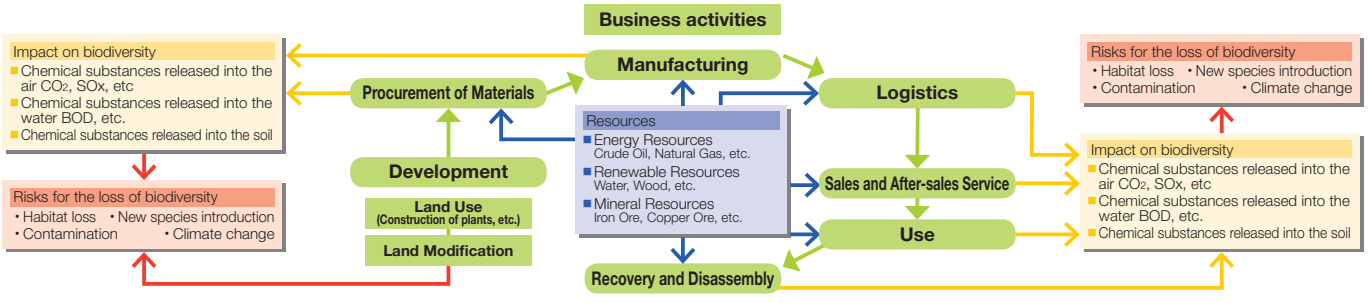
Greening of Factories(Increasing the green coverage ratio of plant premises in Japan)

The green coverage ratio of plant premises in Japan is being increased, working toward a target of 20% by 2015.

◆Planned Increase of the Green Coverage Ratio



◆Relationship between Komatsu's Business Activities and Biodiversity



Enhanced Safety in the Workplace

Komatsu is formulating new policies for occupational safety and physical and mental health management to foster a safe and comfortable work environment.

Message from the President and New Policies Concerning Occupational Safety and Health

Komatsu has been disseminating the Message from the Komatsu President regarding Health and Safety throughout the Komatsu Group.

Message from the President Concerning Occupational Safety and Health

1. The Komatsu Group shall, first of all, strive to "ensure a safe and comfortable work environment" and "maintain and promote employee health."
2. The Komatsu Group shall promote "proactive occupational safety and health activities" in order for all employees to achieve the above conditions by working together as one team.
3. Each and every person in a senior management position of the Komatsu Group shall acknowledge the above two matters as top priority tasks and shall take the initiative in demonstrating the execution of daily duties accordingly.

In addition to the above, this year the company formulated an occupational safety and health guideline: "All Komatsu Group companies, together with all top managers and employees, shall promote occupational safety and health activities, so that employees can work in a safe and comfortable work environment in accordance with the policies described below."

Occupational Safety and Health Policies

(published on April 1, 2011, in conjunction with Komatsu's Worldwide Code of Business Conduct)

(1). Observe the laws and regulations concerning occupational safety and health as well as internal rules, key items common to Komatsu Group about occupational safety and health, and particularly items agreed as a result of labor-management consultations in each workplace.

(2). Set up targets for activities based on occupational safety and health policies, review their progress, and endeavor to continuously improve and enhance occupational safety and health activities.

(3). Carry out occupational safety and health activities in management-and-labor partnership on full participation basis and keep good communication with stakeholders with regard to occupational safety and health.

(4). Identify and evaluate the risk for occupational safety and health of a workplace and take appropriate actions accordingly.

(5). Actively promote employees' healthcare management and support the maintenance and promotion of employees' health.

(6). Actively promote education, training and qualification acquisition necessary for employees' occupational safety and health activities, and endeavor to develop human resources for safely carrying out their responsibilities in workplace.

(7). Subject to appropriate protection of personal information, publicly offer the knowledge and information about occupational safety and health activities obtained through the business activities in order to secure safety and health in society.

Occupational Safety

Efforts on Health and Safety Management by Manufacturing Subsidiaries

Following the certification of the Awazu, Osaka, Oyama and Ibaraki Plants, the Kanazawa Plant acquired Occupational Safety & Health Management System (OSHMS) certification in FY2010. At the same time, Komatsu Castex Ltd. and Komatsu Utility Co., Ltd. (now the Komatsu Tochigi Plant) were the first Group companies to acquire certification. The Komatsu Group has performed assessments to anticipate risks, mainly through small-group workplace activities on safety aiming at "zero accidents." In FY2011, the Group will steadily implement OSHMS at already certified plants, and promote acquisition of OSHMS certification at other Komatsu plants. At the same time the Group will foster occupational safety, mainly through small-group "zero accidents" activities on a full participation basis. While continuing to upgrade safety-related education and training, the Procurement Division and the divisions in charge of safety will jointly support safety activities Group-wide, to include overseas subsidiaries and business associates.
(For example, in FY2010, 74 business associates in Japan, together with 6 plants overseas, held safety instruction on 9 occasions.)

Health and Safety Management at Komatsu Group Distributors and Rental Companies

Komatsu supports safety activities at Group distributors and rental companies in Japan through training and guidance on ways to enhance their safety management. Persons overseeing occupational health and safety at Komatsu and at its distributors and rental companies, provide guidance on areas for improvement through visits to relevant offices, factories, and rental business shops (a total of 107 sites were visited in 2010) to verify firsthand the state of safety management at the site. At distributors and rental companies where occupational accidents have occurred, Komatsu assisted in determining the causes and formulating countermeasures, and applied these measures to other distributors and rental companies across Japan.

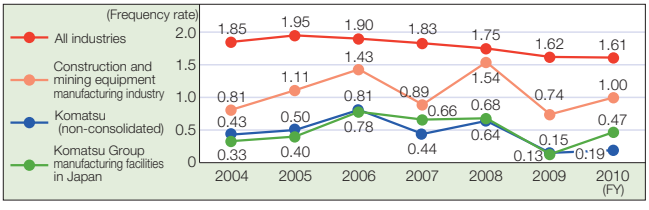
The Komatsu Group further strives to reduce occupational accidents by promoting risk anticipation.

Group Activities

The Group as a whole has been conducting compliance and risk audits on safety to confirm the state of compliance with relevant laws and regulations.

Efforts to eradicate occupational accidents throughout the Group will continue based on intensified management-labor cooperation.

◆ Incidence Rate of Occupational Accidents
(Frequency Rate of Lost Worktime)



CSR Theme 2

Developing People


Global Management Seminar

Key Activities

- Contributing to human resource development in local communities
- Enhancing our employees and suppliers through The KOMATSU Way (employees and business partners in the supply chain)
- Enhancing our employees and distributors through brand management (employees and distributors)

Sharing The KOMATSU Way Globally and Contributing to Society through Human Resource Development

Masakatsu Hioki
Senior Executive Officer
Supervising Compliance, Legal Affairs, Human Resources, Education and Safety & Health Care
Komatsu Ltd.

— First, please explain in concrete terms what is meant by developing people.

Hioki: Komatsu's overseas production went into full swing from the mid 1980's. In the process, the number of national employees increased, resulting in a growing globalization of our work force. Many of these national employees are still working for us, and are part of Komatsu's "backbone".

At Komatsu, we encourage national employees to build on experience working for the company and open the road for them to advance to top management in their respective region. This is what we call "localization of management." Komatsu also devotes efforts to the development of professionals in many fields such as production, sales and product support.

Our way of developing human resources is to thoroughly groom those employees who will assume a role in business locations, whether in Japan or overseas.

— What exactly do you mean by making management local?

Hioki: Our top management around the world would be people who have worked with Komatsu for a long time, have made their career there, and have a deep understanding of Komatsu's way of management and set of values. Offering this kind of employee, who enjoys recognition by those around him/her, the chance to move into top management will also act as a motivation for employees in all regions.

It is better to have local nationals in top management if we are to earn the trust of the local community and of all stakeholders and establish good relations.

I believe that the "localization of management" is the most desirable form of management for both Komatsu's employees and the local community.

— What role do you expect resident staff to play?

Hioki: In our case, a Japanese expat working abroad is a local representative with a limited term of service. Japanese staff is expected to act as a "bridge resource", that is, to bridge the gap between Japan and the host country. This kind of "bridge resource" does not have to be a superhero. What is important is to know one's specialty well and to have the kind of strong will and commitment to get one's message across. Foreign languages, especially English, tend to be thought of as very important, but as long as you have

mastered your area of specialization, the language will come to you naturally later.

— What do you do about developing human resources to support Monozukuri (manufacturing competitiveness) in foreign countries?

Hioki: Plants playing a crucial role in *Monozukuri* are undertaking initiatives to improve technical skills on the shop floor. Our technical competitions, originally limited to Japan, became globalized full-scale as "All Komatsu Technology Olympics" in 2004 by including overseas manufacturing subsidiaries. Staging this kind of technical competition will act as a great motivation catalysis for employees entrusted with *Monozukuri*, making them work harder on the shop floor to improve their technical skills.

In the past, the Product Support Division used to send Japanese expats to train the service engineers of our overseas distributors. Against the background of a growing number of our equipment delivered to customers around the world, however, dispatching Japanese expats to local distributors to train people is not efficient enough to keep up with expanding sales. We were faced with the question of how many qualified service engineers we could train worldwide. In response, we have come up with different approaches to training human resources for product support in different countries.

The Komatsu Human Resource Development Center in the Philippines, for example, offers mechanics training courses for university graduates, and in China, an effort is underway to provide service training courses in cooperation with Shandong University. Developing human resources in our Strategic Markets will not only strengthen our service capabilities for end-customers, but will also address the issue of contributing to local communities.

— Is it correct to say that you believe that by developing human resources you can contribute to the local community?

Hioki: Komatsu's overseas business depends on the support we get from the local community. Providing people the opportunity to receive training at Komatsu facilities or to work at our local companies does not only represent a contribution to the local community, but also translates into the development of human resources available to Komatsu. Even if an individual trained by Komatsu decides to join another company, we do not consider this a loss because it will still benefit his/her community.

Komatsu thinks that faithfully dedicating ourselves to our core business is what CSR activities are all about. I believe we are able to fulfill our corporate social responsibility by pursuing our business activities, and that includes human resource development and contributing to local community.

Competing in the assembly event of the "All Komatsu Technology Olympics"

Young trainees from the local community enrolled in the apprentice school established by Komatsu Cummins Chile Ltda.

— Please elaborate on The KOMATSU Way.

Hioki: The KOMATSU Way refers to the values, attitudes and patterns of behavior that support our operations. The KOMATSU Way was built up by our forerunners at Komatsu, and we want to maintain it globally and through our next generations. We want to share these Komatsu spirits with employees all over the world.

In the top management chapter of The KOMATSU Way, top management is required to explain about business results and status quo of the company to employees at least twice a year. This does not only apply to the presidents of Japanese operations, but the presidents of Group companies overseas. Because the top management itself has taken the leadership in practicing The KOMATSU Way, this principle has also permeated every workplace of Komatsu.

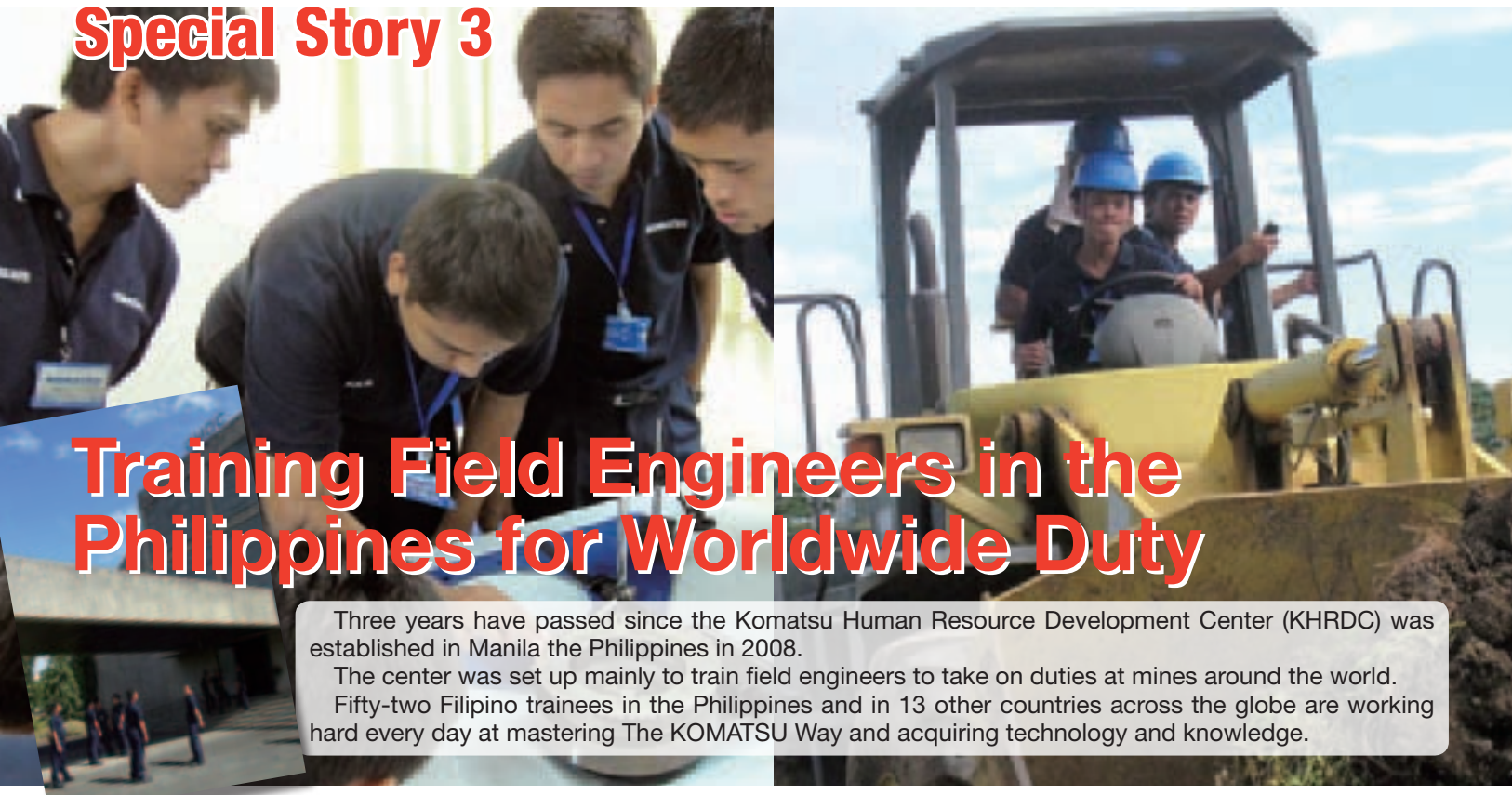
The KOMATSU Way should not be forced on anyone. Instead, employees are encouraged to digest and understand it, and practice whatever they think is reasonable. This is based on the premise that the individuality of employees must be respected.

Sharing The KOMATSU Way will help employees experience a sense of belonging and encourage them to stay with the same company all their working life. The KOMATSU Way also yields a variety of positive effects overseas. For example, the number of employees who have worked for Komatsu for a long time is increasing, and we are seeing more national employees who should shoulder management tasks in the future.

I believe that an important element essential to retain employees at Komatsu for a long time and to develop their career there is to make them feel that having joined Komatsu was a positive move and worthwhile for them. This is what I call "a company worthy of spending one's prime lifetime with".

There are three elements that make up this feeling. The first is the creation of a safe and comfortable work environment, where people are held in high esteem; the second is to provide people with a fair opportunity to take up new challenges, and the third is to compensate people properly for their efforts. Having these three elements neatly in place is important for employees, I think.

Special Story 3



Training Field Engineers in the Philippines for Worldwide Duty

Three years have passed since the Komatsu Human Resource Development Center (KHRDC) was established in Manila the Philippines in 2008.

The center was set up mainly to train field engineers to take on duties at mines around the world.

Fifty-two Filipino trainees in the Philippines and in 13 other countries across the globe are working hard every day at mastering The KOMATSU Way and acquiring technology and knowledge.

Urgency of Training Specialists for Duty at Mining Sites

Highly skilled field engineers capable of providing superior product support are indispensable to maintain stable operation of large mining equipment at busy mining sites.

Komatsu has been aware of this necessity for quite some time, and established a college for product support specialists in Japan, placing emphasis on training Japanese field engineers. The Komatsu Human Resource Development Center in the Philippines was set up in 2008 to reinforce these efforts and expand them on a global scale.

Every year the Center in the Philippines accepts 20 Filipino university graduates who majored in mechanical engineering. Trainees spend four years acquiring knowledge in The KOMATSU Way, which embodies Komatsu's policies and values.

The Center was established in the Philippines because Filipinos have had a long record of making major contributions to the growth of Komatsu's business overseas, through their good knowledge of English, their ability to cope with different cultures, and their superior ability for teamwork.

Entering the Global Stage After Four Years of Training

The Human Resource Development Center trains field engineers using a four-year curriculum.

Training Curriculum

- **Stage 1** (6 months)
  Acquire basic knowledge/technology in the structural makeup, functions, etc. of construction and mining equipment
- **Stage 2** (6 months)
  Acquire advanced practical knowledge/technology at the training center or at mining sites within the Philippines
- **Stage 3** (3 years)
  To produce field engineers with the highest level of technical knowledge of construction equipment, trainees are first sent to Japan for one month of training, and then to mining sites in other countries for practical training.

After four years of training, the trainees are ready to step onto the global stage and take on their duties at Komatsu Group companies around the world. According to Komatsu's educational policy, the training content not only qualifies them for assignments as field engineers, but also as application engineers, IT service engineers, and operator trainers.

Serving as an OJT Site for University Students

Separate from the training program, the Center also accepts university students for on-the-job training (OJT). With many state-run universities in the Philippines requiring students to earn credits by participating in OJT in industry, 20 students were accepted in 2011 to go through three weeks of practical training at the well-equipped Human Resource Development Center. Komatsu will continue contributing to society by responding to such needs.

Voice

Aspiring to Become a Field Engineer Appreciated by Customers around the World

Mr. Ever Dave Vinatero Buyan
Trainee, Global Field Engineer, KHRDC

I am one of the first batch of Global Field Engineer trainees to enter KHRDC. During our 1st stage of training, I had learned many helpful ideas, and acquired data, information, facts and a wealth of knowledge from trainers from Japan, Singapore and Philippines. Through classroom lectures and practical training, as well as OJT at mine sites while working with the mechanics at local distributors, I was able to broaden my perspectives and understanding of construction and mining equipment.

Currently, I am working as a product support engineer in Chile. I was first posted at the Komatsu Reman Center, where I learned a lot about the "Reman" business while working at different departments, such as disassembly, assembly, hydraulics, electronics, and quality assurance.

On my next assignment, at the Radomiro Tomic Mine located next to the Chuquicamata Copper Mine, I learned how to repair and maintain 930E electric dump trucks and how to prepare overhaul schedules for keeping machines in top condition.

I am now working at a new project named Pascua Lama, the first bi-national mining project in the world. Approximately 60 Komatsu mining equipments including the 930E are in operation at this mine. For the moment, we are assembling equipments and are working to maintain quality of the assembly process in order to make sure performance of the machines during the actual operation is good even under extreme conditions of this site, with an altitude of 5,200m where temperature can reach minus 40 degrees Celsius.

To be a renowned global field engineer, whose work is recognized not only by Komatsu, but also by customers around the world is a dream I have been working hard to fulfill. I want to become a world class field service engineer who can speak at least 5 different languages. And if given a chance, I want to become a top executive of the company someday where I can share my knowledge and ideas.

This project (KHRDC) initiated by Komatsu Ltd. is a very good start for young engineers like myself, who are just starting to make our way into this world. I am expecting continued support from the company to keep us motivated to work hard and become excellent field engineers. I commend KHRDC for a job well done in training young engineers in preparing them for the future. I hope that Komatsu will continue to accept and look for ideas to improve the training process.

Voice

The Bicol University and KHRDC: A Global Partnership for Human Resource Development

Engineer Edgardo O. Aguilar
Dean, College of Engineering
Bicol University, Philippines

Environmental conservation efforts is one of Komatsu's highest priority management tasks, and it endeavors to contribute to the sustainable growth of society by integrating advanced technologies into environmental conservation efforts in all its business activities. Bicol University (BU) aims to be a Green University in the coming decade. It looks up to Komatsu as an example of a company with a people and environment friendly plant, creating a safe work environment that enables peace of mind not only to people but also to its stakeholders.

BU and Komatsu Human Resource Development Center (KHRDC) share the same vision for producing global engineers.

BU expects its graduates to be:

(a) Technically competent, with a passion for technology; with a global perspective and driven by the need for quality in the practice of its profession;
(b) Creative and innovative in advancing the state-of-the-art in their fields of expertise;
(c) Results oriented and equipped with the know how to make and communicate decisions while working as a team member for multi-cultural and multi-national audiences;
(d) Ethical, principle centered, and socially responsible

The graduates of BU who are now with Komatsu as field engineers can go beyond the basic foundations to be able to adapt and experience an environment of the industry which is a very rewarding experience.

A partnership with KHRDC offers BU to improve the quality and international comparability of its engineering programs, with a vision for producing excellent engineers by 2020. The partnership will also provide evidence of compliance by BU to its ISO9001:2008 mandate of continually striving for excellence in instruction, research and extension by meeting the highest level of clientele satisfaction and adhering to quality standards.

Given the highly qualified trainees from BU and other universities in its Training Institute, KHRDC will be able to produce excellent field engineers to meet the highest level of customer satisfaction as it continues its expansion in emerging markets and build more lasting relationship with its customers.

BU looks forward to a mutually beneficial relationship in educating for peace and international understanding while trying to adapt to and mitigate the effects of climate change, as BU and Komatsu strive to contribute to the development of various economies and peoples.

Developing Together with Employees

Employees of the Komatsu Group companies are an irreplaceable asset for the Group.
That is why we try to foster a work environment with opportunities for challenge and creativity. The Company strives to maximize the trust given to it by its employees.

Global Policy on Human Resources Management

Human resources management systems differ from region to region, reflecting differences in historical and cultural backgrounds, differences that must be respected and duly taken into consideration.The basic policies for personnel systems common to all Komatsu Group companies around the world are embodied in Komatsu's Worldwide Code of Business Conduct, as stated below. Each region uses these policies to formulate a personnel system that has a competitive edge over other companies.

Komatsu's Worldwide Code of Business Conduct (Chapter 5 of A)

1. We shall respect each employee's fundamental human rights, inherent personality, individuality and legally protected privacy.
2. We shall treat and appraise each and every employee in a fair and impartial manner. We shall not discriminate against any employee on the basis of nationality, race, religion, age, gender, physical or mental disability, or other legally protected attributes that are irrelevant to his or her performance. We shall vigorously endeavor to promote equal opportunities for employment and eliminate harassment in the workplace.
3. We shall endeavor to provide the employees with workplaces where they can seek good balance between their private life and professional life while effectively accomplishing their respective tasks with satisfaction and pride.
4. We shall endeavor to design and administer the systems of human resources management in a manner that is most reasonable and persuasive to the employees. We shall make such systems open and clearly explain them to the employees to the maximum extent practicable.
5. Komatsu Group companies shall comply with all applicable laws and regulations governing employees' rights in jurisdictions in which they operate and faithfully accommodate, whenever applicable, conversations or discussions with employees or their representatives.
6. We shall not tolerate child labor or forced labor.
7. Komatsu Group companies shall endeavor to offer to their respective employees those terms and conditions for employment that are sufficiently competitive in their respective regions.

Komatsu has set forth Komatsu's Five Principles for Hiring, namely: (1) the company does not consider age or gender, in hiring decisions; (2) the company does not consider national or regional origins in hiring decisions; (3) the company does not consider religious affiliation or beliefs in hiring decisions; (4) the company does not consider the existence of disabilities that are not job performance related in hiring decisions; and (5) the company gives significant consideration to work experience at other companies or in other industries in hiring decisions. Komatsu conducts its hiring practices based on these five principles, which are disclosed on its website.

Developing Human Resources Globally

The development of global human resources is an ongoing theme for the Komatsu Group. To maximize corporate value, while growing together with its employees, Komatsu is setting the following policy in an effort toward further developing its human resources.

Basic Policy on Education and Training

- Each employee should set high goals, be self-reliant and self-motivated in acquiring knowledge and skills.
- The Company should support employee career development through the implementation of necessary education for both the Company and employees in a focused manner.
- The objective of the education policy is "education", facilitating the ongoing growth of the Company and its employees.

While fulfilling basic and specialized education in fields such as research and development, production, and sales and after-sales service, the Company is also supporting the acquisition of the necessary attitudes that go with knowledge and skills, at every level in the Company, from new hires to management. Furthermore, we intend to promote human resource development on a global, Group-wide basis, including the training of employees outside Japan, as well as the employees of our business partners.

Topics

New training center opened on the site where Komatsu was founded to celebrate the company's 90th anniversary

In May 2011, a new training center was opened in "Komatsu Green Park" in Komatsu City, the site where Komatsu was founded, to commemorate the company's 90th anniversary. This new training center consolidates educational facilities scattered throughout Japan and acts as a training center for various fields on a global, Group-wide basis. Positioned as a global hub for service training, it will focus on actual training, as well as the development of new training programs and materials. At the same time, the center will assume the role of Komatsu's human resource developer. The center is equipped with interpretation booths for three languages and hosts a variety of meetings and events from Japan and abroad, making it a center for cultivating global teamwork.

Within the "Komatsu Green Park", the building that housed the head office when the company was founded in Komatsu City was re-opened as the "Kids Pavillion", where children can try their hand at running equipment or enjoy various science experiments. A park with a nature area lets children enjoy the natural surroundings or get hands-on experience with growing plants.

World-largest dump truck 930E in "Komatsu Green Park" opened in May 12

These facilities are not solely aimed at accelerating Komatsu's global human resource development, but are meant to be a contribution to Komatsu City, the company's birthplace, with the hope that they will attract local children and provide an opportunity to develop an interest in science and nature.

Nurturing Leaders and Global Management

The development of global human resources is an ongoing theme for the Komatsu Group. We are nurturing human resources that can play an active role on the global scene, to develop the next generation of leaders in a timely manner, and to train employees in our global operations to take on positions in management.

Nurturing the Next Generation of Leaders

We have been holding the Top Management Forum and Global Management Seminars since 2006, targeted at top and senior managers of our global subsidiaries. The forum and seminars have been attended by 50 persons so far. The purpose of the seminars is to deepen the understanding of Komatsu's corporate strategy, The KOMATSU Way, and of leadership in general, through the discussion with the President and top management, and provide opportunities to engage in group discussions, to share information and build teamwork. On the last day of training, participants are given an opportunity to present proposals to top management on the practice of The KOMATSU Way.

A follow-up meeting was held in the Global Management Seminar in 2008, with 15 former participants of this seminar in attendance. This meeting was used to further deepen the understanding of The KOMATSU Way outreach and human resource development.

In 2009, seminars were inaugurated for "The KOMATSU Way Leadership Development Program", to train middle level managers from all over the world, The first seminar was held in Shanghai, China. In 2010, the second seminar was held in Jakarta, Indonesia, and the third again in China. Even though nurturing employees for top management positions is important, superior mid-level management potential is essential for the actual implementation of policies. Noting that human resource development is an urgent matter, especially in China and Greater Asia, where the market is rapidly growing, we continue to support such career development activities.

Seminar held in Shanghai, China in November 2010, attended by 24 persons

In the spirit of global teamwork, we will continue to share our values, and focus the Group's power in the same direction, as we continue to pursue growth.

Pursuing Localization of Global Management

Komatsu is actively promoting localization of management at its global subsidiaries. This policy is based on the belief that Komatsu's differentiation and competitiveness are grounded in Japan's culture of *Monozukuri*. The company encourages placing the management of subsidiaries in the various regions, each with its own historical and cultural background, into the hands of local nationals. This is in view of the fact that the majority of consolidated Group employees are non-Japanese, although the company remains rooted in Japan.

Voice

In South Africa, People of South Africa run our Japanese company

Michael A. Blom
President
Komatsu Southern Africa (Pty) Ltd. (KSAf)

In 2008, I was the first non-Japanese person to be appointed President of KSAf. This was eleven years after KSAf was established, and 27 years after I joined Komatsu Southern Africa at age 20 (1981) and was put in charge of parts procurement.

I believe that KSAf succeeded in making its management national because the successive generations of Japanese presidents, each in their own time and in their own way, dedicated themselves to building the company system and developing national management. And this success story spawned a philosophy that can be summed up in the words: "In South Africa, people of South Africa run our Japanese company." In order for the company and staff to grow, we, as a member of the Komatsu Group, which has its roots in Japan, must understand what is required and operate in a way that best fits local needs, by connecting this understanding with local wisdom and knowledge.

CSR Theme 3

Growing with Society


Komatsu's demining machine at work in Angola

Key Activities

- Engaging in dialogues with our stakeholders
- Providing social contributions through the use of our core technologies and resources (e.g., disaster relief or activities to remove antipersonnel land mines)
- Contributing to our local communities where we do business
- Strengthening our corporate governance and compliance
- Promoting compliance with environmental, labor, and social norms within our group and among business partners

Global Activities with a Focus on Communication

Fusao Seki
Senior Executive Officer
Supervising Corporate Communications, CSR and General Affairs
Komatsu Ltd.

— First, please explain in concrete terms what is meant by growing with society.

Seki: In line with Komatsu's philosophy that our corporate value is the total sum of trust placed in us by society and our stakeholders, we strongly believe that our growth must go hand in hand with the growth of all of our stakeholders and of society.

This year, we narrowed down the core themes for Komatsu's CSR activities from the viewpoint of how we can satisfy the demands of society through our core business. Without trying to sound overly self-important, we are moving forward by concentrating on the societal needs that we can best serve by the business fields and activities that we are good at.

And as business becomes more and more global, I believe it is important to respect regional characteristics and culture in all our activities, and thoroughly follow through on basic issues, such as abiding by internal controls and regulations.

— It says here: Providing social contributions through the use of our core technologies and resources. How does this relate to the earthquake and tsunami that caused widespread destruction in Japan's Tohoku region this March?

Seki: As reconstruction work continues in the disaster-hit areas, my heart goes out to all those who have suffered losses. When a disaster of this magnitude strikes, the first and foremost need at the disaster site is equipment, such as construction machines and generators, and prefab housing. To illustrate Komatsu's commitment to leveraging our core business to contribute to society, I would like to point to the many times Komatsu has rushed to the site of a natural disaster and quickly provided assistance. In this latest disaster, as well, Komatsu started its relief work immediately after the earthquake hit.

Although this is not related to natural disasters, I would like to mention that demining machines, which Komatsu developed from what was originally construction equipment, are currently in action in Cambodia, Angola and other countries. The machine has received high acclaim from the NPO with which we are jointly engaged in mine disposal and from the local people who use the machine. The machine makes the

demining process quicker and safer, compared to the case when demining work was done by hand.

I think that the above cases, where Komatsu's fields of specialization closely match the needs of society, can be regarded as examples of activities that contribute to society.

— Is the company engaged in any other activities related to its worldwide operations?

Seki: All our global entities, such as subsidiaries and distributors, in the various countries and regions engage in their own activities. As is the case with Komatsu's business, to be able to know what is most urgently needed, you must be familiar with the circumstances, culture and customs of the region.

For example, Komatsu Southern Africa (Pty) Ltd., has been joining hands with a customer to provide young people who were not able to get a proper education due to racial discrimination with educational opportunities, to make them employable. As another example, several subsidiaries in China have jointly set up a fund made up of contributions from both the employees and the subsidiaries, that is used for worthwhile purposes, such as building elementary schools.

In many other places worldwide, Komatsu and its global subsidiaries engage in activities that are unique to the location, addressing needs that are particular to the region. Komatsu, on its part, will continue to work under local leadership to search for appropriate themes and implement these themes, to make Komatsu an indispensable presence in a region, not only from a business standpoint, but also as a corporate citizen.

Young people training in "Komatsu/Denron Community Center"

Ground breaking ceremony of an elementally school in Yunnan (China)

— You mention dialogues with stakeholders. What does this involve?

Seki: Stakeholders are generally considered to be interested parties, but at Komatsu, we specifically include customers, shareholders and investors, distributors, business partners in the supply chain, the local community, and employees in this group. We have always given great importance to communication, and this is where Komatsu feels its strongest commitment, as evidenced by Komatsu's President giving in-person briefings to employees, distributors, business partners, shareholders and investors worldwide on the current state of the company at regular meetings.

After making sure that information is properly shared within the Group, we want to take this one step further in the future, by explaining facts on how we do business to society. Any areas not meeting the needs of stakeholders, we will endeavor to tie this kind of communication into our activities to better align our activities with society. I think repeating this kind of two way communication will become increasingly important.

Kids' tour of working vehicles held at Komatsu techno center (in Izu, Shizuoka prefecture)

— I think you have placed more emphasis than before on corporate governance and compliance. Are you facing any new challenges?

Seki: We have set up a system that ensures higher managerial transparency through measures such as the strengthening of corporate governance and the establishment of an international advisory board that includes knowledgeable persons from outside the company. As for compliance, we have made changes to the system, to be open-minded and learn from past mistakes. This is because we believe that observing compliance will translate into aggressive business development.

What will become increasingly important from now on will be taking a global approach that also encompasses our business partners. Komatsu's Worldwide Code of Business Conduct, established in 1998, continues to undergo revision, with the 8th edition having been published in 2011. To make sure that employees familiarize themselves with the Code, we have our global subsidiaries translate the Code into their respective local languages. On another front, the regulations of the Komatsu "Midori-kai" group, an association of the company's business associates in Japan, were recently revised to ensure that Komatsu's business partners also observe applicable laws and regulations.

Whatever the activity, the more globalized it is in nature, the greater the need will be to know global rules and circumstances, and to take a realistic approach. Komatsu will continue to bolster its CSR activities, while taking the circumstances of each individual country into account.

Special Story 4
Together with Business Partners

The relationship of trust we have with our business partners in the supply chain (suppliers) is the foundation of Komatsu Group's manufacturing operations. Komatsu thinks of its business partners as equal partners. Over a long history of collaboration, the Company and its business partners have overcome various difficulties by jointly addressing issues to realize solutions.

Business Partners are Important to Komatsu

For a manufacturer, business partners in the supply chain – the suppliers of materials, parts and components – are important partners who help sustain the quality and reliability of products. Komatsu places great value on this relationship of mutual support, which has not been limited to procurement, but over the course of many years has also extended to management and human resource development.

In this age of accelerating globalization and development of flexible production systems, our relationship with our business partners takes on an increasingly important role.

Organizations that Facilitate Collaboration

The Komatsu "Midori-kai" group is an association of the Company's major business partners in Japan. With 163 member companies, this group supplies roughly 80% of Komatsu's total procurement in Japan.

Komatsu holds various events to foster communication with Midori-kai group members, convening general conferences, roundtable discussions for managers, and informal New Year's business functions. Representatives from each Midori-kai group company attend these meetings, together with Komatsu's top management, providing a forum for interaction and exchanges of opinions. Outside Japan, the Komatsu Shantui Midori-kai group in China is already active, and European and North American Midori-kai groups have been launched, bringing total participation to more than 115 overseas companies. Komatsu plans to establish an association of business partners in Asia (other than Japan and China) and strengthen global partnerships with its business partners.

Green Procurement and CSR Procurement

In 1999, Komatsu issued its "Green Procurement Guideline" to supply customers with products that are in harmony with the environment. With the understanding and cooperation of its business partners, the Company has been giving preference to merchandise and products that have a minimal environmental impact. The Company also distributes an "Environmental Check Sheet" to its main business partners to allow them to clarify their understanding of their environmental management systems and grasp the environmental impact of their products. At the same time, the check sheet calls for and supports the certification of environmental management systems.

As part of the commitment to complete implementation of CSR procurement throughout the supply chain, Komatsu is encouraging its business partners to comply with social norms, including laws and regulations, environmental and corporate ethics, and consideration of human rights and labor rights in the workplace. Business partners are willing to disclose information to Komatsu, because of the long relationship of trust that has been forged through the mutual support the two sides have shown for each other in hard times. Based on this relationship, Komatsu assesses the level of safety and quality of their business partners on an ongoing basis, through visits and other careful fact-finding. Through close communication with its associates, the Company provides recommendations on safety and quality, as necessary.

In August 2011, the Company plans to issue a "CSR Guideline", which will incorporate a revised version of the "Green Procurement Guideline" as well as CSR issues. To pursue a globally accepted form of procurement, Komatsu will formulate a guideline that responds to societal needs and will require business partners to observe the guideline.

Providing Educational Opportunities to Support Human Resource Development

Komatsu shares common goals with its business partners, together aiming to achieve ever-higher levels of quality, cost, and delivery (QCD) through tireless efforts for improvement. To that end, the Company actively supports human resource development. It provides education and training in quality control (QC) activities and manufacturing technologies. It also allows employees of the Midori-kai group companies to participate in technical training provided to Komatsu's own employees.

Komatsu is trying to take an "agricultural" approach to procurement. It is important for Komatsu to build a relationship where the Company and its business partners pool their knowledge and draw up with a blueprint for harvesting a good crop in the next year that exceed the current year results. Ultimately, this is what will keep quality consistent at Komatsu.

Officers' Meeting of Komatsu Midori-kai Held in May, 2011

Topics

Supporting Companies Stricken by the Earthquake

Komatsu's first step in supporting its business partners that suffered devastation in the recent earthquake and tsunami was to thoroughly assess the circumstances of each company. Based on this assessment, companies were supplied with daily necessities, such as food, water, cooking utensils, and items for keeping warm. In addition, every effort was made to restore production capabilities as early as possible. On the weekend immediately following the earthquake, Komatsu plant employees went to each stricken area and joined together with the employees of the business partners to repair and inspect equipment. The goal was to first help seven of the hardest hit business partners to resume production. All in all 53 people were involved in this work, over a total of 188 days. Thanks to these initiatives, Komatsu's disaster-affected business partners were able to resume production. This made it possible for production at Komatsu's own facilities to continue smoothly, while at the same time strengthening the spirit of teamwork between Komatsu and its business partners.

Supporting reconstruction for a business partner in the stricken area

Voice

Effort to Further Progression for Both Sides – Komatsu and Midori-kai Companies

Mr. Shigeo Tsuda
President Nagatsu Industries Ltd.
President, Komatsu Midori-kai

The recent Tohoku earthquake has affected many members of the Midori-kai group, but Komatsu has extended great support to these companies in a variety of forms, including dispatch of manpower and relief donations. This has resulted in even stronger ties between Komatsu and the members of the Midori-kai.

Since I became Chairman of the Midori-kai, I have often been interviewed about the future prospects of small and medium-sized companies and the current circumstances of our association of cooperating firms. On such occasions, I usually speak about Komatsu and its close relationship with the Midori-kai group. Although it is less frequent now, at first I would get skeptical looks from the interviewers. But, when I quoted concrete examples, reporters would invariably be surprised, saying: "That's different from the stories I hear at other companies."

Maintaining this kind of relationship requires effort on both sides. Komatsu, under the leadership of its top management, has formulated The KOMATSU Way as it applies to procurement. I consider this to be an indicator of Komatsu's commitment to continuing its partnership with the members of the Midori-kai group. The Midori-kai, on its part, strives to ensure that each member lives up to the policy that the customer is No.1. I am convinced that these efforts will maintain and nurture our relationship, and will contribute to improving the business performance of both Komatsu and the Midori-kai member companies. To keep this relationship alive, I think the member companies of our association, especially those that are family-owned, must nurture successors that are capable of maintaining open communication with Komatsu and of establishing a system of succession.

Communicating with Stakeholders

Komatsu takes advantage of a variety of opportunities to communicate with its stakeholders.

For Komatsu, corporate value is the cornerstone of management – it is the total sum of trust given to us by society and all stakeholders. Two-way communication with stakeholders is essential for heightening this trust. Through kind of communication and by listening to opinions from a broad range of stakeholders, the company strives to make its business activities valuable both society and the company, by incorporating the results of these efforts into Komatsu's business operations.

Communicating with Employees

"Employee Meetings"

At least twice a year, the President and CEO convenes a "Meeting with the President" event for employees at each business unit, to explain the state of the company, its direction for the future, and the President's thoughts. These meetings use an active question and answer format to allow top management and employees to interact directly. Another opportunity for exchange of opinions is the Employees Meeting, where top management from each business unit explains the current state of the business to their employees, and encourages employees to share work-related thoughts and requests.

Communication meeting held in February 2011 at the Peoria Plant of Komatsu America Corp.

CSR Training

As society places ever-higher expectations on businesses, there is a strong push for companies to shoulder their corporate social responsibility. Against this background, Komatsu pursues CSR training, to help employees consider their attitude toward the role of their work in society. In FY 2010, sessions were held at all four Komatsu manufacturing facilities in Japan, giving employees an opportunity to better understand the way Komatsu addresses societal challenges.

CSR training held in January 2011 at the Ibaraki Plant

Communicating with the Local Community

Komatsu continually tries to harmonize its interests with the interests of the local community as a responsible corporate citizen, and make itself more open to society. Worldwide, the company maintains a dialog with local governments and local residents, so that the community can gain a better understanding of the company's business activities.

Germany: Communicating for Human Resource Development in the Region

Komatsu Hanomag GmbH (KOHAG) is communicating with local educational institutions to promote regional human resource development, an important issue for both regional development and business. By joining the board of local universities, KOHAG has key influence on the contents of course programs and what method of education would best translate into development of the economy in the region.

Within the framework of the collaboration between KOHAG and local universities, KOHAG has received 25 apprentices from the universities since 2005, providing them with technical training in fields such as welding and assembly technology. Of the three years that technical students spend at the university, they receive a two-year credit for the time they spend at KOHAG. After graduation, students can either join KOHAG or find employment elsewhere being well-educated.

In January 2011, Lower Saxony's Minister of Social Welfare visited KOHAG to get a first-hand look at the apprenticeship program. The minister was given a tour of the trainee's worksite to gain an understanding of KOHAG's initiative. There was an exchange of opinions between the Minister and KOHAG's President about the public-private partnership for making education the top priority for the region and how well educated professionals will benefit both the region and business.

Lower Saxony's Minister for Social Welfare visiting training workshop in January 2011

Living in Harmony with Local Communities

As a responsible corporate citizen, Komatsu pursues initiatives that enrich the lives of the people living in the communities where Komatsu operates.

Indonesia: Supporting the Spiritual Practices of Local Residents

In 2006, PT Komatsu Indonesia (KI) established a Fund for Social Contribution to actively serve the surrounding communities of the region. One recent initiative is for supporting mosques, which serve as a place of prayer and communion for the local population.

Supporting the Renovation of Mosques

The majority of the residents who live in KI's surrounding Sukapura District of North Jakarta are faithful Muslims who come from the Batavia tribe of Jakarta. The mosque serves as a place of prayer and gathering for people to solve their problems and engage in semi-formal traditional events. The prayer leader (Imam) leads the community mobilizing the people to share their problems through spiritual activities, and activities at the mosque are a source of peace and comfort for the people.

As a contribution that will benefit the surrounding community, KI donated funds for the renovation of the Qurrota Ain Mosque in August 2010. The newly renovated mosque is now not only a holy place of prayer used for meeting and ceremonial agenda, but also serves as a space to educate the community's children as well as develop new skills for adults and as a place for solving community problems where government officials can communicate with local scholars and public figures. This provides local residents with a sense of belonging, and the company with a sense of solidarity, through its financing of the renovation project. KI believes that such activities offer benefits to both the local community and the company.

Gathering at the Qurrota Ain Mosque

Providing a Location for a 1,800-person Mosque

KI has also made a location available on its premises for the erection of a mosque. Most of KI's employees are Muslims, and the KI Mosque, which can hold 1,800 persons, is used for ritual events and regular prayers, and as a meeting place for the people of the local community.

KI is convinced that there is no other way than to live in harmonious relation with society, and will continue to pursue these initiatives.

Activities of employees and local residents at the mosque on the KI premises

Australia: Partnering to Raise the Level of Technical Education in the Region

Komatsu's distributor in Australia, Komatsu Australia Pty Ltd. (KAL), is partnering with three local technical institutes to provide courses in service technology for construction and mining equipment. These courses offer training in mechanical technology, with an emphasis on practical skills and to develop human resources that can master these fields. Training courses are also offered for technical teachers, who will be able to teach these subjects in the future. One objective is to establish these courses as a standardized approach to training of apprentices recognized and qualified by the Australian government.

KAL provides the training facilities, access to machines, and technical training staff. The institutes have the strengths in technical education expertise through their facilities and teachers geared to nationally recognized qualifications approved by the Australian government. As of May 2011, approximately 147 students and apprentices were enrolled in the courses either at KAL or the institutes. In addition to teaching mechanical and service technology, the courses provide training on overall skills necessary that transform students into leading members of society, such as attitudes toward safety, the environment, and business.

After finishing the courses, students and apprentices will work for KAL or apply for employment elsewhere in the region.Since 2009, KAL has employed 60 apprentices entirely in-house and trained them at its facilities. Once these apprentices have completed their coursework, they will be posted as employees at various locations.

KAL will continue promoting this kind of partnership with regional educational institutes accruing benefit to both customers and the local community.

Trainees being taught practical skills in the service technology course

Removing Anti-personnel Landmines

—Contributing to society by providing demining machines—

Using its expertise in construction equipment technology, Komatsu is supporting demining work in areas plagued by anti-personnel landmines. Komatsu also participates in community development projects to revitalize landmine-affected areas.

Removing Anti-personnel Landmines

Vast numbers of anti-personnel landmines have been left behind in the aftermath of regional conflicts across the globe in the latter part of the twentieth century. Many of these landmines remain explosive indefinitely, claiming countless victims, whether they are people carrying on with their daily lives or children playing outdoors.

As a manufacturer of construction equipment, Komatsu has put its expertise and *Monozukuri* resources to work in developing demining machinery and participating in demining activities.

The Komatsu Demining Machine for Anti-personnel mines

Komatsu's demining machine uses a bulldozer weighing approximately 27 tons as its base. Not only is this machine highly reliable and durable, it can move speedy on rocky terrain, wetlands and slopes and can efficiently handle large areas. Spare parts are readily available, and by simply changing the attachment on the front of the vehicle, it can be used as a bulldozer for ground leveling, road construction and other work.

The machine is also equipped with the same remote control technology that is used on construction equipment in disaster recovery areas and similar conditions. Remote control operation greatly improves operator safety in these circumstances.

The Komatsu Demining Machine for Anti-personnel mines

From Demining to Regional Reconstruction – Working Jointly with a Japanese NPO

Since 2008, Komatsu has been working jointly with the Japan Mine Action Service (JMAS), a non-profit organization registered in Japan, on a project for regional reconstruction in Cambodia and Angola. Komatsu loaned the demining machine to JMAS free-of-charge to ensure smooth cleanup operations, and safe use of construction equipment when developing agricultural land and constructing wells, building schools, and repairing and building roads and bridges. This has helped to reconstruct and revitalize the communities in the regions.

In March 2011, a land transfer ceremony was held to mark the completion of minefield rehabilitation work that extends across two villages in Battambang province in northwestern Cambodia. Once soil safety has been ascertained and infrastructure is in place, 500 families from surrounding villages will settle on this land. The ceremony was a grand affair, attended by nearly 1,300 people, including government officials from both Japan and Cambodia, representatives of JMAS and Komatsu, and settlers and local residents.

Komatsu hopes to continue and further broaden these regional reconstruction activities, which started out as demining projects.

Nearby residents coming to settle in the area
Photographed in front of the KOMATSU Safety Village Primary School

◆Contributing to society by providing machines for removal anti-personnel mines

March 1999	Ottawa Treaty comes into effect (Total Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines)
August 2002	The Japanese government decides to make the development of a demining machine an exception to the three-point ban on weapons exports.
March 2003	Komatsu applies for a public subsidy program offered by the Ministry of Economy, Trade and Industry and NEDO and embarks on the development of a demining machine
2004 to 2006	Demining machine site tests in Afghanistan and Cambodia with the support of the Ministry of Foreign Affairs
July 2007	First machine delivered to Afghanistan (Given to an NGO under ODA from the Japanese government)
January 2008	Agreement concluded with Japan Mine Action Service (JMAS), a non-profit organization registered in Japan
March 2008	Second machine delivered to Cambodia (under the Grant Aid for Research and Development of Mine Clearance Related Equipment by the Government of Japanese).
June 2008	Third machine delivered to the Cambodia project (REAK SMEY SANGHA SEN CHEY, Battambang province) *Loaned to JMAS free-of-charge
October 2008	Fourth machine delivered to the Angola project (Mabubas village, Bengo province) *Loaned to JMAS free-of-charge
April 2009	Angola local reconstruction project started
September 2010	Fifth machine delivered to Cambodia (Delivered under the Grant Aid for Conflict Prevention and Peace Building by the Government of Japan.
March 2011	Land transfer ceremony held for the Cambodia local reconstruction project (mentioned in this document)

Disaster Relief —The Tohoku Earthquake—

Komatsu is supporting the areas stricken by the Tohoku Earthquake through its business activities. We believe that the most effective support is to promptly provide construction equipment and to ensure continued operation through servicing support.

Disaster Relief

Providing Equipment and Temporary Housing for Reconstruction

Since the Tohoku Earthquake struck in March 2011, Komatsu has committed to disaster relief initiatives equaling 800 million yen, in the form of its own construction equipment, forklifts, temporary housing, and power generators leased free of charge, as well as prefab housing for clinics and community halls. To enable responsive and continuous relief work, Komatsu set up a dedicated organization in the stricken area, tasked with ensuring smooth delivery of equipment and replacement parts and service operations.

Hydraulic excavators at work in stricken area

Extending Scholarships to Students

Komatsu will support affected students who will play a central role in the future of Japan's manufacturing in the strong belief that no student should have to give up studying due to the consequences of the disaster.

Such supporting activities include the "Komatsu Scholarship" set up with a total endowment of 200 million yen for students of disaster-stricken national technical colleges in the Tohoku and North Kanto regions. The scholarship fund will receive annual contributions of 20 million yen for the duration of ten years.

In addition, Komatsu and Rio Tinto, a leading international mining group of mineral resources, have reached an agreement to jointly offer scholarships to undergraduate and graduate students of Tohoku University under the name "Rio Tinto-Komatsu Scholarship". The scholarship will be endowed with 400 million yen over a period of ten years.

Disaster Relief and Recovery within the Group

Disaster Relief for Affected Group Members and Employees

Immediately following the earthquake, Komatsu immediately began confirming the safety of its employees and their families, and its business partners (distributors and suppliers). This is in line with Komatsu's policy of giving top priority to lives and safety. Those stricken by the disaster were supplied with daily use articles, which were in short supply, from plants and distributors located in unaffected areas. To help people get back on their feet, and alleviate uncertainty about the future, the Group continued to retain employees, including non-regular workers, providing housing assistance to those living in disaster-stricken areas, and extending other forms of financial relief. The Group companies and unions jointly collected contributions that were channeled to employees stricken by the disaster.

After assessing the situation of each business partner individually, business partners that suffered serious damage were supplied with daily use articles, and Komatsu employees were dispatched to help the partners quickly recover and restart production. Komatsu employees also worked with business partners and distributors to ensure that facilities were repaired and inspected, and that procurement parts were delivered.

Restoring Production and Normalizing Business Activities

In the wake of the earthquake and tsunami disaster, some of Komatsu's own plants were forced to stop production, due to direct damage or delays in parts procurement. But, thanks to prompt measures, production was resumed at an early date. Komatsu is also aware that production may be affected in the future by external factors, such as power restrictions, recovery of the logistics network, and nuclear power plant issues, but the company will take a flexible approach, and will strive to maintain production and minimize any inconvenience to our customers worldwide.

Response to the Nuclear Power Plant Accident

Contributing Products and Technology

The private and public sectors are partnering to take measures against the effects of the accident at the Fukushima Nuclear Power Plant that followed the earthquake and tsunami. Komatsu continues to collaborate with government and corporations working in the disaster-hit areas, contributing products, technology and service. To protect operators from the danger of radiation while working in the vicinity of the accident sites, radio-operated construction equipment are being utilized at the sites.

Sales Event for Vegetables Grown in Fukushima and Ibaraki Prefectures

Komatsu organized events for employees that featured direct sale of vegetables grown in Fukushima and Ibaraki Prefectures. This was a show of support for the farmers that have been affected by rumors of contamination of their agricultural produce with radioactive substances leaking from the damaged nuclear power plant. This event was held four times in total at the Head Office and in several plants, achieving sales of 1.05 million yen worth of vegetables.

Environmental Data by Manufacturing Facility in Japan

Overview	Manufacturing facility	Awazu Plant (established in 1921)	Kanazawa Plant (established in 2007)	Osaka Plant (established in 1952)
	Location	Komatsu, Ishikawa Prefecture	Kanazawa, Ishikawa Prefecture	Hirakata, Osaka Prefecture
	Main products	Small and medium-sized bulldozers, small hydraulic excavators, small and medium-sized wheel loaders, motor graders, armored vehicles, etc.	Ultra-large hydraulic excavators, large presses	Large bulldozers, medium-sized and large hydraulic excavators, mobile crushers/recyclers/tub grinders (crushers, soil stabilizers, tub grinders, etc.)
	Site/production area (1,000 m^2)	716/187	134/22	541/121
	Number of employees	3,269	581	2,052
	Date of ISO14001 certification acquisition	September 1997	May 2007	July 1997

*The number of employees includes those working for Komatsu affiliates on the premises.
*Number of employees as of end of March 2011.

Major Performance

Environmental impact
*Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.
*Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.
*Recycling rate is calculated by dividing the amount recycled by the amount generated (including valuables).
*Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

Item	Actual value	Item	Actual value	Item	Actual value
Total CO_2 emissions	41,111 t-CO_2	Total CO_2 emissions	2,813 t-CO_2	Total CO_2 emissions	35,319 t-CO_2
NOx total amount	12,998 kg	NOx total amount	— kg	NOx total amount	2,930 kg
SOx total amount	3,681 kg	SOx total amount	0 kg	SOx total amount	173 kg
Total emissions of waste	1,685 t	Total emissions of waste	208 t	Total emissions of waste	1,553 t
Amount recycled	1,684 t	Amount recycled	208 t	Amount recycled	1,550 t
Recycling rate	99.9 %	Recycling rate	100 %	Recycling rate	99.8 %
BOD emissions	3,894 kg	BOD emissions	209 kg	BOD emissions	103 kg
COD emissions	2,812 kg	COD emissions	463 kg	COD emissions	735 kg
Wastewater	1,851,783 m^3	Wastewater	72,000 m^3	Wastewater	149,185 m^3

Energy consumption
*The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emissions Calculation - Reporting Manual by the Act on Promotion of Global Warming Countermeasures.

Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)
Electricity	73,108 MWh	710,862	Electricity	7,138 MWh	69,597	Electricity	68,162 MWh	662,323
Heavy oil A	2,818 kℓ	110,176	Heavy oil A	0 kℓ	0	Heavy oil A	215 kℓ	8,407
Kerosene	12 kℓ	424	Kerosene	0 kℓ	0	Kerosene	81 kℓ	2,973
Light oil	264 kℓ	10,078	Light oil	1 kℓ	53	Light oil	275 kℓ	10,505
Town gas	0 Nkm^3	0	Town gas	0 Nkm^3	0	Town gas	3,692 Nkm^3	154,695
LPG	1,517 t	76,159	LPG	1 t	25	LPG	61 t	3,062
Other		1,939	Other		990	Other		1,592
Total		909,638	Total		70,666	Total		843,556

Compliance Conditions to Major Regulations

Air

Item	Unit	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Boiler	180	96	N/A	—	—	Boiler	150	18
	ppm	Diesel engine	950	640				Metal furnace	180	52
	ppm							Paint drying furnace	230	4
	ppm									
Sulfur oxides (SOx)	—	K-value regulation	17.5	1.2				Regulation of total emissions (Nm^3/h)	1.573	0.002
Soot and dust	g/m^3N	Boiler	0.3	0.002	N/A	—	—	Boiler	0.03	0.001 or less
	g/m^3N	Diesel engine	0.1	0.019				Metal furnace	0.1	0.013
	g/m^3N							Paint drying furnace	0.1	0.0036
	g/m^3N									

*Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater

Item	Regulated value according to the Water Pollution Control Law Unit	Regulated value	Actual value			Regulated value	Actual value			Regulated value	Actual value		
			Maximum	Minimum	Average		Maximum	Minimum	Average		Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.3	6.8	7.1	5.0-9.0	7.9	6.9	7.4	5.8-8.6	8.0	7.3	7.5
BOD (Biochemical oxygen demand)	160mg/ℓ	80	3.9	1.0	2.0	80	2.9	2.9	—	25	1.6	0.2	0.7
COD (Chemical Oxygen Demand)	160mg/ℓ	80	6.7	ND	1.4	80	13.0	5.0	6.4	25	7.4	3.7	4.9
Suspended solids (SS)	200mg/ℓ	120	6.2	ND	1.3	120	4.5	4.5	—	80	3.6	1.2	2.1
Mineral oils	5mg/ℓ	5	ND	ND	ND	5	ND	ND	—	3	0.1	ND	0.1
Copper	3mg/ℓ	3	ND	ND	ND	3	ND	ND	—	3	ND	ND	ND
Zinc	2mg/ℓ	2	0.15	ND	0.08	5	ND	ND	—	2	ND	ND	ND
Nitrogen	120mg/ℓ	120	4.4	2.1	3.7	120	5.8	5.8	—	120	19.0	2.2	5.7
Phosphorus	16mg/ℓ	16	0.27	0.03	0.12	16	1.6	1.6	—	16	1.8	ND	0.4
Cadmium	0.1mg/ℓ	0.1	ND	ND	ND	0.1	ND	ND	—	0.01	ND	ND	ND
Lead	0.1mg/ℓ	0.1	ND	ND	ND	0.1	ND	ND	—	0.01	ND	ND	ND
Chromium (VI)	0.5mg/ℓ	0.5	ND	ND	ND	0.5	ND	ND	—	0.05	ND	ND	ND
Trichloroethylene	0.3mg/ℓ	0.3	0.004	ND	0.003	0.3	ND	ND	—	0.03	ND	ND	ND
Tetrachloroethylene	0.1mg/ℓ	0.1	ND	ND	ND	0.1	ND	ND	—	0.01	0.0007	ND	0.0007
Dichloromethane	0.2mg/ℓ	0.2	ND	ND	ND	0.2	ND	ND	—	0.02	ND	ND	ND
1,1,1-trichloroethane	3mg/ℓ	3	ND	ND	ND	3	ND	ND	—	1	ND	ND	ND

*Regulated values are in accordance with the Water Pollution Control Law and local regulations.
*ND ("not detected") indicates a value below the lower limit of detection.
*ND is considered to be the lower limit of detection when calculating the average.
*Other items are confirmed to be below the regulated value.

*Data for the Awazu Plant include data for the Komatsu Machinery Corporation and the Komatsu Engineering Corp. (Awazu Plant).

*Data for the Kanazawa Plant include data for the Kanazawa Dai-ichi, Dai-ni and the Kawakita Plant.

*Data for the Osaka Plant include data for the Rokko Plant.

Ibaraki Plant (established in 2007)	Oyama Plant (established in 1962)	Koriyama Plant (established in 1995)	Shonan Plant (established in 1966)
Hitachinaka, Ibaraki Prefecture	Oyama, Tochigi Prefecture	Koriyama, Fukushima Prefecture	Hiratsuka, Kanagawa Prefecture
Large wheel loaders, dump trucks	Engines for construction/industrial machinery, diesel generators, hydraulic equipment, axle, excimer lasers, etc.	Hydraulic cylinders, swivel joints, gear pumps	Control equipment for construction and mining equipment, hybrid components Thermoelectric modules, temperature control equipment, etc.
251/46	561/140	297/19	68/5
872	3,600	448	1,035
May 2007	May 1997	July 2002	March 2000

Item	Actual value	Item	Actual value	Item	Actual value	Item	Actual value
Total CO_2 emissions	4,659 t-CO_2	Total CO_2 emissions	70,086 t-CO_2	Total CO_2 emissions	12,823 t-CO_2	Total CO_2 emissions	2,901 t-CO_2
NOx total amount	— kg	NOx total amount	59,145 kg	NOx total amount	84,908 kg	NOx total amount	0 kg
SOx total amount	142 kg	SOx total amount	657 kg	SOx total amount	4,810 kg	SOx total amount	0 kg
Total emissions of waste	411 t	Total emissions of waste	3,590 t	Total emissions of waste	964 t	Total emissions of waste	133 t
Amount recycled	411 t	Amount recycled	3,590 t	Amount recycled	964 t	Amount recycled	133 t
Recycling rate	100 %	Recycling rate	100 %	Recycling rate	100 %	Recycling rate	100 %
BOD emissions	9,771 kg	BOD emissions	4,797 kg	BOD emissions	67 kg	BOD emissions	2,716 kg
COD emissions	— kg	COD emissions	7,897 kg	COD emissions	226 kg	COD emissions	— kg
Wastewater	17,552 m^3	Wastewater	568,800 m^3	Wastewater	19,995 m^3	Wastewater	35,907 m^3

Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)
Electricity	10,522 MWh	102,800	Electricity	93,484 MWh	907,395	Electricity	11,020 MWh	106,639	Electricity	7,476 MWh	74,536
Heavy oil A	66 kℓ	2,581	Heavy oil A	358 kℓ	13,978	Heavy oil A	2,880 kℓ	112,608	Heavy oil A	0 kℓ	0
Kerosene	14 kℓ	511	Kerosene	4,293 kℓ	157,553	Kerosene	0 kℓ	0	Kerosene	0 kℓ	0
Light oil	113 kℓ	4,316	Light oil	3,760 kℓ	143,613	Light oil	0 kℓ	0	Light oil	0 kℓ	0
Town gas	0 Nkm^3	0	Town gas	6,177 Nkm^3	258,816	Town gas	0 Nkm^3	0	Town gas	15 Nkm^3	637
LPG	35 t	1,758	LPG	45 t	2,259	LPG	262 t	13,152	LPG	0 t	0
Other		57	Other		3,407	Other		0	Other		0
Total		112,022	Total		1,487,021	Total		232,399	Total		75,173

Facility	Regulated value	Actual value	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value
N/A	—	—	Diesel engine	950	830	Cogeneration engine	760	740	N/A	—	—
			Gas turbine	70	17						
			Boiler	180	72						
			Annealing furnace	200	50						
			K-value regulation	7.0	0.57	K-value regulation	11.5	0.39			
N/A	—	—	Diesel engine	0.1	0.021	Tempering (electric) furnace	0.2	less than 0.003	N/A	—	—
			Boiler	0.3	0.002	Baking (electric) furnace	0.2	less than 0.003			
			Annealing furnace	0.25	0.01	Cogeneration engine	0.2	0.05			
			Electric furnace	0.2	0.001						

Regulated value	Actual value			Regulated value	Actual value			Regulated value	Actual value			Regulated value	Actual value		
	Maximum	Minimum	Average		Maximum	Minimum	Average		Maximum	Minimum	Average		Maximum	Minimum	Average
5-9	—	—	—	5.8-8.6	7.6	6.9	7.2	5.8-8.6	7.4	6.9	7.2	5-9	8.1	6.2	7.3
600	950*	190	557	25	15.6	3.6	8.4	20	8.7	ND	3.4	600	200	2.0	45.0
—	—	—	—	25	19.8	6.5	13.9	40	17.0	6.2	11.3	—	—	—	—
—	—	—	—	50	19.2	2.4	9.4	50	26.0	1.0	4.8	600	110	ND	21.0
30	61.0*	5.4	25.0	5	0.5	ND	0.5	1	ND	ND	ND	5	ND	ND	ND
—	—	—	—	3	ND	ND	ND	2	ND	ND	—	3	ND	ND	0.05
—	—	—	—	2	0.12	ND	0.06	2	0.12	0.12	—	2	0.14	0.02	0.07
—	—	—	—	20	10.0	3.5	6.4	120	29.0	29.0	—	—	—	—	—
—	—	—	—	2	1.0	0.1	0.3	16	3.1	3.1	—	—	—	—	—
—	—	—	—	0.1	ND	ND	ND	0.1	ND	ND	—	0.1	ND	ND	ND
—	—	—	—	0.1	ND	ND	ND	0.1	ND	ND	ND	0.1	ND	ND	ND
—	—	—	—	0.1	ND	ND	ND	0.1	ND	ND	ND	0.5	ND	ND	ND
—	—	—	—	0.3	ND	ND	ND	0.3	ND	ND	—	0.3	ND	ND	ND
—	—	—	—	0.1	ND	ND	ND	0.1	ND	ND	—	0.1	ND	ND	ND
—	—	—	—	—	—	—	—	0.2	ND	ND	—	0.2	ND	ND	ND
—	—	—	—	3	ND	ND	ND	3	ND	ND	—	3	ND	ND	ND

*Data for the Ibaraki Plant include data for the Mooka Plant.
*After the advisory meeting with local sewerage works division, measures are being executed because the restriction value was temporarily exceeded.

*Data for the Oyama Plant include data for the Komatsu Cummins Engine Co., Ltd., the Industrial Power Alliance Ltd., and the GIGAPHOTON, Inc.

*Data for the Shonan Plant include data for KELK Ltd.

Overview			
Manufacturing facility	Research Division (established in 1985)	Komatsu Utility Co., Ltd. (established in 1968)	Komatsu Castex Ltd. (established in 1952)
Location	Hiratsuka, Kanagawa Prefecture	Oyama, Tochigi Prefecture	Himi, Toyama Prefecture
Main products	R&D on business fields of the Komatsu Group	Forklift trucks, mini shovel, mini wheel loaders, etc.	Iron castings, steel castings, molds for casting, etc.
Site/production area (1,000 m^2)	195/0	245/48	429/73
Number of employees	193	1,070	1,219
Date of ISO14001 certification acquisition	May 2008	February 1998	January 2000

*The number of employees includes those working for Komatsu affiliates on the premises.
*Number of employees as of end of March 2011.

Major Performance

Environmental impact
*Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.
*Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.
*Recycling rate is calculated by dividing the amount recycled by the amount generated (including valuables).
*Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

Item	Actual value	Item	Actual value	Item	Actual value
Total CO_2 emissions	2,095 t-CO_2	Total CO_2 emissions	4,719 t-CO_2	Total CO_2 emissions	77,389 t-CO_2
NOx total amount	293 kg	NOx total amount	1,429 kg	NOx total amount	14,449 kg
SOx total amount	46 kg	SOx total amount	1,168 kg	SOx total amount	1,925 kg
Total emissions of waste	84 t	Total emissions of waste	565 t	Total emissions of waste	8,316 t
Amount recycled	83 t	Amount recycled	565 t	Amount recycled	8,053 t
Recycling rate	98.1 %	Recycling rate	100 %	Recycling rate	99.3 %
BOD emissions	5 kg	BOD emissions	431 kg	BOD emissions	3,307 kg
COD emissions	11 kg	COD emissions	561 kg	COD emissions	4,340 kg
Wastewater	3,417 m^3	Wastewater	99,659 m^3	Wastewater	1,256,862 m^3

Energy consumption
*The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emissions Calculation - Reporting Manual by the Act on Promotion of Global Warming Countermeasures.

Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)
Electricity	4,169 MWh	40,317	Electricity	7,866 MWh	76,471	Electricity	150,097 MWh	1,457,585
Heavy oil A	32 kℓ	1,251	Heavy oil A	440 kℓ	17,204	Heavy oil A	2,417 kℓ	94,485
Kerosene	104 kℓ	3,809	Kerosene	4 kℓ	147	Kerosene	1,176 kℓ	43,159
Light oil	52 kℓ	1,983	Light oil	32 kℓ	1,222	Light oil	309 kℓ	11,821
Town gas	0 Nkm^3	0	Town gas	0 Nkm^3	0	Town gas	0 Nkm^3	0
LPG	4 t	211	LPG	125 t	6,275	LPG	3,152 t	158,230
Other		10	Other		554	Other		138
Total		47,582	Total		101,873	Total		1,765,419

Compliance Conditions to Major Regulations

Air

Item	Unit	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	Service generator	303	70	Small boilers*	(260)	64	Annealing furnace	200	60
	ppm	Cold/hot water generator	390	34				Annealing furnace (small)	180	30
	ppm							Calciners	220	7
	ppm									
Sulfur oxides (SOx)	—	K-value regulation	11.5	0.2	K-value regulation	7.0	0.16	K-value regulation	17.5	0.95
Soot and dust	g/m^{3}N	Service generator	0.1	0.022	Small boilers*	(0.5)	0.004	Annealing furnace	0.25	0.01 or less
	g/m^{3}N	Cold/hot water generator	0.2	0.001				Annealing furnace (small)	0.2	0.01 or less
	g/m^{3}N							Calciners	0.15	0.01 or less
	g/m^{3}N							Arch furnace	0.1	0.01 or less

*Regulated values are in accordance with the Air Pollution Control Law and local regulations.

*Regulated values of NOx, soot and dust are in accordance with self-regulatory measures, because these boilers are small.

Wastewater

Item	Regulated value according to the Water Pollution Control Law Unit	Regulated value	Actual value			Regulated value	Actual value			Regulated value	Actual value		
			Maximum	Minimum	Average		Maximum	Minimum	Average		Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.4	7.0	7.2	5.8-8.6	7.4	7.0	7.2	5.8-8.6	8.8	6.9	7.8
BOD (Biochemical oxygen demand)	160mg/ℓ	10	2.0	1.0	1.7	25	7.9	1.9	4.3	25	5.1	1.3	2.6
COD (Chemical Oxygen Demand)	160mg/ℓ	25	7.0	2.0	4.5	25	10.9	2.9	5.6	160	6.3	2.3	3.5
Suspended solids (SS)	200mg/ℓ	65	14.0	2.0	5.3	50	18.8	2.4	7.6	90	20.0	ND	6.3
Mineral oils	5mg/ℓ	5	1.0	1.0	1.0	5	ND	ND	ND	5	ND	ND	ND
Copper	3mg/ℓ	1	ND	ND	ND	3	ND	ND	ND	1	ND	ND	ND
Zinc	2mg/ℓ	1	ND	ND	ND	2	0.23	ND	0.07	2	ND	ND	ND
Nitrogen	120mg/ℓ	120	—	—	—	20	6.0	2.3	4.2	120	8.4	1.6	4.8
Phosphorus	16mg/ℓ	16	—	—	—	2	0.67	0.21	0.44	16	0.83	0.07	0.31
Cadmium	0.1mg/ℓ	0.1	0.01	ND	0.01	0.1	ND	ND	ND	0.1	ND	ND	ND
Lead	0.1mg/ℓ	0.1	0.05	0.05	0.05	0.1	ND	ND	ND	0.1	ND	ND	ND
Chromium (VI)	0.5mg/ℓ	0.5	0.05	0.05	0.05	0.1	ND	ND	ND	0.5	ND	ND	ND
Trichloroethylene	0.3mg/ℓ	0.3	ND	ND	ND	0.3	ND	ND	ND	0.3	ND	ND	ND
Tetrachloroethylene	0.1mg/ℓ	0.1	0.002	0.002	0.002	0.1	ND	ND	ND	0.1	ND	ND	ND
Dichloromethane	0.2mg/ℓ	0.2	ND	ND	ND	0.2	ND	ND	ND	0.2	ND	ND	ND
1,1,1-trichloroethane	3mg/ℓ	3	0.002	0.002	0.002	3	ND	ND	ND	3	ND	ND	ND

*Regulated values are in accordance with the Water Pollution Control Law and local regulations.
*ND ("not detected") indicates a value below the lower limit of detection.
*ND is considered to be the lower limit of detection when calculating the average.
*Other items are confirmed to be below the regulated value.

Overview			
Manufacturing facility	**Komatsu Cabtec Co., Ltd. (established in 1918)**	**Komatsu NTC Ltd. (established in 1945)**	**Komatsu House Ltd. (established in 1971)**
Location	Ryuou-cho, Gamou, Shiga Prefecture	Nanto, Toyama Prefecture	Shinshiro, Aichi Prefecture
Main products	Cabs for construction equipment	Machine tools, sheet-metal machines, semiconductor manufacturing equipment	Prefabricated structures for businesses
Site/production area (1,000 m^2)	41/7	188/68	31/10
Number of employees	366	670	40
Date of ISO14001 certification acquisition	December 2007	June 1999	March 2002

*The number of employees includes those working for Komatsu affiliates on the premises.
*Number of employees as of end of March 2011.

Major Performance

Environmental impact
*Refer to the Data on Environmental Impact Resulting from Business Activities for details on the methods used to calculate amounts.
*Total emissions of waste are expressed as a composite of the amount recycled (excluding valuables) and the amount disposed.
*Recycling rate is calculated by dividing the amount recycled by the amount generated (including valuables).
*Total emissions of BOD and COD are calculated by multiplying the average concentration by the amount of wastewater.

Item	Actual value	Item	Actual value	Item	Actual value
Total CO_2 emissions	3,776 t-CO_2	Total CO_2 emissions	8,308 t-CO_2	Total CO_2 emissions	639 t-CO_2
NOx total amount	— kg	NOx total amount	— kg	NOx total amount	356 kg
SOx total amount	4 kg	SOx total amount	0 kg	SOx total amount	76 kg
Total emissions of waste	401 t	Total emissions of waste	1,697 t	Total emissions of waste	36 t
Amount recycled	187 t	Amount recycled	1,517 t	Amount recycled	36 t
Recycling rate	97.2 %	Recycling rate	94.2 %	Recycling rate	100 %
BOD emissions	800 kg	BOD emissions	719 kg	BOD emissions	50 kg
COD emissions	577 kg	COD emissions	— kg	COD emissions	127 kg
Wastewater	133,305 m^3	Wastewater	1,437,941 m^3	Wastewater	15,270 m^3

Energy consumption
*The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emissions Calculation - Reporting Manual by the Act on Promotion of Global Warming Countermeasures.

Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)
Electricity	7,536 MWh	73,596	Electricity	21,257 MWh	208,130	Electricity	625 MWh	6,231
Heavy oil A	0 kℓ	0	Heavy oil A	0 kℓ	0	Heavy oil A	54 kℓ	2,111
Kerosene	26 kℓ	954	Kerosene	1 kℓ	18	Kerosene	0 kℓ	0
Light oil	57 kℓ	2,158	Light oil	12 kℓ	458	Light oil	5 kℓ	195
Town gas	0 Nkm^3	0	Town gas	0 Nkm^3	0	Town gas	0 Nkm^3	0
LPG	223 t	11,195	LPG	35 t	1,733	LPG	80 t	4,006
Other		0	Other		138	Other		0
Total		87,903	Total		210,478	Total		12,543

Compliance Conditions to Major Regulations

Air

Item	Unit	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value	Facility	Regulated value	Actual value
Nitrogen oxides (NOx)	ppm	N/A	—	—	N/A	—	—	Boiler	250	59
Sulfur oxides (SOx)	—							K-value regulation	17.5	0.51
Soot and dust	g/m^{3}N	N/A	—	—	N/A	—	—	Boiler	0.3	0.003

*Regulated values are in accordance with the Air Pollution Control Law and local regulations.

Wastewater

Item	Regulated value according to the Water Pollution Control Law Unit	Regulated value	Actual value			Regulated value	Actual value			Regulated value	Actual value		
			Maximum	Minimum	Average		Maximum	Minimum	Average		Maximum	Minimum	Average
pH	5.8-8.6	5.8-8.6	7.4	7.0	7.2	5.8-8.6	7.3	6.4	6.8	5.8-8.6	7.3	6.3	6.9
BOD (Biochemical oxygen demand)	160mg/ℓ	20	17.0	1.0	6.0	160	0.5	ND	0.5	160	6.5	0.5	3.3
COD (Chemical Oxygen Demand)	160mg/ℓ	20	7.1	2.7	4.3	—	—	—	—	160	16.0	4.0	8.3
Suspended solids (SS)	200mg/ℓ	20	8.4	0.5	3.7	200	2.0	ND	1.1	200	6.0	1.0	2.4
Mineral oils	5mg/ℓ	—	—	—	—	5	ND	ND	ND	5	ND	ND	ND
Copper	3mg/ℓ	0.1	0.03	ND	0.01	—	—	—	—	—	—	—	—
Zinc	2mg/ℓ	0.5	0.14	0.02	0.04	—	—	—	—	—	—	—	—
Nitrogen	120mg/ℓ	8	7.7	1.5	4.5	—	—	—	—	120	25.0	3.3	13.3
Phosphorus	16mg/ℓ	0.6	0.5	ND	0.2	—	—	—	—	16	3.4	0.3	1.4
Lead	0.1mg/ℓ	0.03	ND	ND	ND	—	—	—	—	—	—	—	—

*Regulated values are in accordance with the Water Pollution Control Law and local regulations.
*ND ("not detected") indicates a value below the lower limit of detection.
*ND is considered to be the lower limit of detection when calculating the average.
*Other items are confirmed to be below the regulated value.

*Data for Komatsu NTC Ltd. include data for Lossev Technology Corporation, Toyama Kiko Corporation, and D.S.K. Co., Ltd.

Overview		
Manufacturing facility	Komatsu Construction Equipment Sales and Service Japan Ltd. (established in March 1967)	**Komatsu Rental Ltd. (established in Oct. 2006)**
Location	Sagamihara, Kanagawa Prefecture (Head office)	Yokohama, Kanagawa Prefecture (Head office)
Activities	Sales and service for construction machinery	Rentals for construction machinery, engineering works construction machine apparatuses, and vehicles
Number of bases	101 sites	147 sites
Number of employees	1,936	981
Date of ISO14001 certification acquisition	—	—

Major Performance

Environmental impact
*Total waste emissions are equal to the amount disposed + the amount recycled (including valuables)
*Recycling rate is calculated by dividing the amount recycled by the amount generated (including valuables.)

Item	Actual value	Item	Actual value
Total CO_2 emissions	5,050 t-CO_2	Total CO_2 emissions	2,712 t-CO_2
Total emissions of waste	4,009 t	Total emissions of waste	2,118 t
Amount recycled	2,824 t	Amount recycled	1,692 t
Recycling rate	70.4 %	Recycling rate	79.9 %

Energy consumption
*The heat energy conversion factor is calculated in keeping with Greenhouse Gas Emissions Calculation - Reporting Manual by the Act on Promotion of Global Warming Countermeasures.

Item	Actual consumption	Converted to calorie equivalents (GJ)	Item	Actual consumption	Converted to calorie equivalents (GJ)
Electricity	9,622 MWh	95,931	Electricity	5,663 MWh	56,462
Heavy oil A	50 kℓ	1,967	Heavy oil A	0 kℓ	0
Kerosene	379 kℓ	13,906	Kerosene	101 kℓ	3,718
Light oil	48 kℓ	1,834	Light oil	90 kℓ	3,442
LPG	27 t	1,345	LPG	9 t	427
Town gas, et al.		1,304	Town gas, et al.		360
Total		116,287	Total		64,409

*A part of data is not included because of the influence of the earthquake

Environmental Data by Manufacturing Facility outside Japan

The Americas / Europe

		CMO	PEORIA	NMO	KDB	Hensley	KUK	KOHAG	KMG
Overview	Manufacturing facilities	Komatsu America Corp.			Komatsu do Brasil Ltda.	Hensley Industries, Inc.	Komatsu UK Ltd.	Komatsu Hanomag GmbH	Komatsu Mining Germany GmbH
		Chattanooga Manufacturing Operation	Peoria Manufacturing Operation	Newberry Manufacturing Operation					
	Location	Tennessee, U.S.A.	Illinois, U.S.A.	South Carolina, U.S.A.	São Paulo, Brazil	Texas, U.S.A.	Birtley, United Kingdom	Hannover, Germany	Düsseldorf, Germany
	Main products	Hydraulic excavators, motor graders	Large wheel loaders, large dump trucks	Utility equipment (small construction equipment)	Hydraulic excavators, bulldozers	Buckets, teeth and edges	Hydraulic excavators	Wheel loaders, compactors	Ultra-large hydraulic excavators
	Number of employees	1,812			829	497	292	531	445
Energy consumption	Electricity (MWh)	7,483	17,587	3,097	29,880	35,745	4,525	4,675	7,231
	Heavy oil, light oil, et al. (kℓ)	177	140	—	490	132	239	2	9
	Natural gas (thousand m^3)	1,209	2,573	26	—	4	869	736	1,177
	LPG, et al. (t)	—	24 (LPG)	81 (LPG)	510 (LPG)	113 (LPG)	—	—	—
	Total energy consumption (GJ)	127,161	279,407	35,943	342,341	367,256	85,396	72,877	114,405
	CO_2 (t-CO_2)	7,054	15,408	2,059	5,329	21,073	4,569	4,232	5,075
Water consumption (t)		8,047	32,944	547	31,936	48,217	7,598	7,547	11,817
Total emissions of waste (t)		396	2,908	338	8,530	28,968	742	596	5,178
Date of ISO14001 certification acquisition		April 1998	March 2002	March 2004	January 2002	November 2009	December 1998	September 2000	July 2002

Europe / Asia

		KMR	KUE	STAVMEK	KFAB	KI	KUI	KOFI	BKC
Overview	Manufacturing facilities	Komatsu Manufacturing Rus, LLC	Komatsu Utility Europe S.p.A.	Stavmek s.r.o.	Komatsu Forest AB	PT Komatsu Indonesia	PT Komatsu Undercarriage Indonesia	PT KOMATSU FORGING INDONESIA	Bangkok Komatsu Co., Ltd.
	Location	Yaroslavl, Russia	Este (PD), Italy	Czech Republic	Umeå, Sweden	Jakarta, Indonesia	West Java, Indonesia	West Java, Indonesia	Chonburi, Thailand
	Main products	Hydraulic excavators, forklift trucks	Utility equipment (small construction equipment)	Manufacture of sheet metal parts for construction equipment	Forestry equipment	Hydraulic excavators, bulldozers, wheel loaders	Crawler type for construction machinery, rollers	Parts for construction machinery	Hydraulic excavators
	Number of employees	155	404	119	371	971	200	406	456
Energy consumption	Electricity (MWh)	2,957	3,189	3,784	2,418	34,127	6,913	40,448	7,995
	Heavy oil, light oil, et al. (kℓ)	14	—	—	—	1,132	272	1,291	590
	Natural gas (thousand m^3)	1,025	613	371	—	1,729	—	—	—
	LPG, et al. (t)	—	—	—	—	180 (LPG)	216 (LPG)	—	29 (LPG)
	Total energy consumption (GJ)	71,870	55,338	50,928	27,402	463,226	90,368	453,488	103,939
	CO_2 (t-CO_2)	3,043	2,509	2,724	335	30,767	6,184	31,566	5,924
Water consumption (t)		7,507	9,298	17,511	4,353	97,125	39,048	47,134	69,947
Total emissions of waste (t)		279	872	162	259	7,146	962	5,937	693
Date of ISO14001 certification acquisition		—	November 2001	—	October 2003	June 2000	July 2009	October 2008	September 2001

Asia

		BKI	LTK	KIPL	KSC	KCCM	KCF	KSD	KUCC
Overview	Manufacturing facilities	Bangkok Komatsu Industries Co., Ltd.	L&T-Komatsu Limited	Komatsu India Pvt. Ltd.	Komatsu Shantui Construction Machinery Co., Ltd.	Komatsu (Changzhou) Construction Machinery Corp.	Komatsu (Changzhou) Foundry Corp.	Komatsu (Shandong) Construction Machinery Corp.	Komatsu Undercarriage China Corp.
	Location	Chonburi. Thailand	Bangalore, India	Chennai, India	Shandong, China	Jiangsu, China	Jiangsu, China	Shandong, China	Shandong, China
	Main products	Forklift trucks, Castiron parts for construction machinery	Hydraulic excavators	Dump trucks	Hydraulic excavators	Wheel loaders, hydraulic excavators, motor graders	Iron castings and foundry molds for construction and mining equipment	Mini construction equipment, forklift trucks, hydraulic equipment and mining equipment	Crawler type for construction machinery
	Number of employees	337	677	205	828	573	289	339	322
Energy consumption	Electricity (MWh)	33,824	7,263	561	11,360	3,351	52,082	5,755	30,338
	Heavy oil, light oil, et al. (kℓ)	68	548	67	1,286	1,961	154	810	82
	Natural gas (thousand m^3)	—	—	—	406	—	—	119	1,016
	LPG, et al. (t)	160.56 (LPG)	149 (LPG)	—	—	30 (LPG)	167 (Coal, LPG, LNG)	7,919 (LNG)	—
	Total energy consumption (GJ)	347,943	101,038	8,174	179,849	110,484	531,507	523,699	347,200
	CO_2 (t-CO_2)	18,762	8,701	702	16,538	7,901	41,824	28,243	26,198
Water consumption (t)		62,977	59,559	23,168	179,612	108,457	100,488	52,745	92,860
Total emissions of waste (t)		7,508	2,010	75	1,446	1,134	11,346	703	4,630
Date of ISO14001 certification acquisition		December 2009	June 1999	January 2010	December 2000	September 2000	December 1999	—	—

Notes 1. All data, except the number of employees, were derived from performances of all manufacturing facilities during FY2010.
The number of employees was based on the companies' data as of March 31, 2011.
2. Conversion to CO_2 and total energy consumption were based on statistical data of each region, country, and that of IEA for 2010.
3. Total emissions of waste are expressed as a composite of the amount recycled and the amount disposed.

All values are sum of former 3 corps (KUC, KHM, KSCC)

Environmental Management and Environmental Accounting

Courses in Environmental Education and Training in Japan (excluding general environmental courses)

Organizer	No.	Course name	Target	Participants			
				FY2007	FY2008	FY2009	FY2010
Head Office	1	Advanced environmental education (held every two years)	Environmental specialists (Komatsu and affiliates)	19	—	16	—
	2	Overview of the ISO14000 series	Administrators (Komatsu, affiliates, and business associates)	36	32	55	83
	3	Training of internal auditors / Refresher courses	Environmental auditors (Komatsu, affiliates, and business associates)	51	41	40	273
	4	Development and manufacturing (introductory)	Development and manufacturing staff (for second-year employees)	97	139	182	112
	5	Environmental training for manufacturing engineers	Assistant foremen/ foremen/ manufacturing engineers/ students of Komatsu Institute of Technology	50	66	91	114
	6	Training new employees	New Employees (Komatsu and affiliates)	186	227	115	200
	7	Lectures on the environment, experience-oriented education	Komatsu Group managers and employees	308	1,329	398	1,002
	8	Education for enhanced environmental understanding (e-Learning)	Komatsu Group managers	—	—	—	—
	9	Education to refresh environmental understanding (e-Learning)	Komatsu Group managers and employees	191	164	237	194
Divisions overseeing environ-mental manage-ment at plants	1	Education in the basics of auditing	Managers and employees	371	153	98	99
	2	Overview of the ISO14000 series	Managers and employees	2,138	302	836	468
	3	Training of internal auditors	Environmental auditors	30	59	7	26
	4	Training new employees	New Employees	666	675	1,116	1,240
	5	Regulatory education and personnel exchange	Employees	788	1,276	517	448
	6	Specialist training	Environmental conservation practitioners (persons involved in regulatory affairs, etc.)	113	1,776	2,466	952

In addition to the education and training courses listed above, Komatsu also held courses dealing with environmental issues intended for sales agents.

Number of Persons Having Environment-related Certificate

Certificate name	Number of persons with certificate*			
	FY2007	FY2008	FY2009	FY2010
Pollution control administrators	192 (51)	195 (49)	177 (39)	178 (33)
Energy administrators	39 (14)	40 (13)	48 (13)	42 (10)
Environmental management system auditors	8	8	7	6

Effects on Society during the Product Use Stage*

Environmental impact reduction effects	Tangible benefits
● Environmental impact reduction resulting from on-site recycling methods ● Environmental impact reduction resulting from product operation ● Waste components reduction resulting from "Reman" business	● Reduction of expenses for processing waste materials ● Savings in operating and maintenance costs ● Reduction of repair costs

* Concerning the effects on society derived from product use by customers, the major items of qualitative information are shown here as a reference.

Environmental Costs (Investments and expenses)

Komatsu and Komatsu Group manufacturing facilities in Japan

Category	Investment			Expenses		
	FY2009	FY2010		FY2009	FY2010	
	Investment* (millions of yen)	Investment* (millions of yen)	Contents	Expenses* (millions of yen)	Expenses* (millions of yen)	Contents
(1) Business area cost	1,228	1,544		2,671	3,692	
1. Pollution prevention cost	871	1,107	● Investment for installation and conversion of pollution mitigation/prevention facilities (installation of effluent processing facilities, conversion of painting booths, etc.)	700	1,191	● Cost of maintaining equipment for mitigation/prevention of air and water pollution and for noise and vibration prevention (labor and depreciation costs)
2. Global environmental conservation cost	337	291	● Investment for implementing energy conservation measures (installation of new ventilation systems, etc.)	866	1,162	● Cost of maintaining energy conservation facilities, such as cogeneration systems (labor and depreciation costs)
3. Resource circulation cost	20	146	● Investment for reducing the volume of waste materials (conversion of recycling facilities, introduction of equipment for separating waste, etc.)	1,105	1,339	● Waste material processing cost
(2) Upstream/downstream cost	0	1		218	259	● Reduction of the environmental impact of components, etc. shipped outside Japan ● Reduction of the environmental impact of mass-production units
(3) Administration cost	2	23	● Investment for beautifying manufacturing sites	702	929	● Cost of maintaining environmental management systems ● Cost of creating green spaces and beautifying manufacturing sites
(4) R&D cost	295	172	● Investment in research facilities for reduction of environmental impact	12,039	14,128	● Cost of R&D activities to reduce the environmental impact of products ● Cost of R&D activities to develop environmentally-friendly construction equipment
(5) Social activity cost	0	0		11	13	
(6) Environmental remediation cost	0	0		746	418	● Cost of conducting surveys and remedial countermeasures related to soil and groundwater contamination
Total	1,526	1,740		16,387	19,440	

* All figures are rounded off to the nearest million yen.

Environmental Effects

Komatsu and Komatsu Group manufacturing facilities in Japan

Environmental impact reduction effects		
Items of environmental impact	Reduction amount (t/year)	Rate of year-on-year changes (%)
CO_2 emissions	76,791	40.4
Water consumption	680,098	12.5
Waste materials generation	5,501	38.9

Economic benefits				
Tangible benefits			Avoidance benefits of environmental risks (see Note below)	Contribution to profits (see Note below)
Type	Monetary value* (millions of yen)	Major activities		
Energy conservation	332	● Energy conversion, etc.	● There were no accidents or pollution in Japan during FY2010 that led to violations of the law. ● No litigation costs were required in Japan during FY2010.	● Proceeds from mobile recycling equipment ● Proceeds from value added due to reduced environmental impact of products (engines) ● Proceeds from Reman business
Resource conservation	1			
Waste materials reduction	793	● Promotion of recycling through thoroughgoing sorting		
Gain on sale of valuables	473	● Reuse of furnace slag for roadbed materials		
Other	3			
Total	1,602			

* Figures are rounded off to the nearest million yen.

Note: Komatsu used statements instead of numeral figures to describe the "Avoidance benefits of environmental risks" and the "Contribution to profits." The company will further develop concepts and ways to understand effects in these categories. The sales amounts of businesses for content presented in "Contributions to profits" in FY2010 are as follows:
- Mobile recycling equipment business: 1.0 billion yen
- Engine business: 120.8 billion yen (Total for intra-Group sales from the Engine Business Division)
- "Reman" business: 35.3 billion yen (Worldwide Reman business sales from April 2010 to March 2011)

Company Profile

Company name	Komatsu Ltd.
Established	May 13, 1921
Head Office	2-3-6, Akasaka, Minato-ku, Tokyo 107-8414, Japan
Representative	President and Chief Executive Officer Kunio Noji
Common Stock	Consolidated ¥67,870 million (US$828 million*) as of March 31, 2011
Net sales (for the fiscal year** ended March 31, 2011)	Consolidated ¥1,843,127 million (US$22,206 million*) Non-consolidated ¥742,519 million (US$8,946 million*) *The translation of Japanese yen amounts into US dollar amounts is included solely for convenience and has been made for the fiscal year ended March 31, 2011 at the rate of ¥83 to US$1, the approximate rate of exchange at March 31, 2011. **Komatsu's fiscal years end on March 31. "FY2000," for example, means from April 1, 2000 to March 31, 2001.
Main lines of business (Komatsu Group)	Manufacture and sale of construction and mining equipment, utility equipment (small construction equipment), forestry equipment, industrial machinery, etc.
Komatsu Group profile	Number of affiliated companies 184

(as of March 31, 2011)

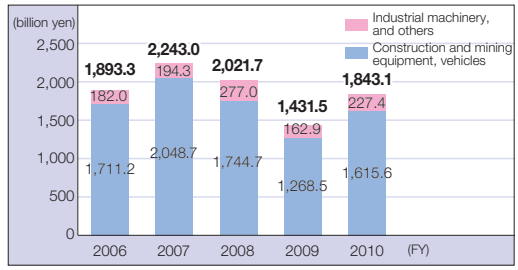
Number of employees:
(as of March 31, 2011)

Consolidated	41,059
Non-consolidated	8,210
Consolidated subsidiaries in Japan	10,043
Consolidated subsidiaries outside Japan	22,806

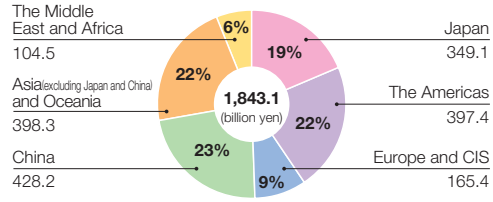
Number of employees by region:
(as of March 31, 2011)

Japan	18,253
The Americas	9,128
Europe and CIS	3,138
China	4,115
Asia (excluding Japan and China) **and Oceania**	5,319
The Middle East and Africa	1,106

◆Changes in Consolidated Sales



◆Sales by Region (FY2010)



Note: The sales ratio by region has been rounded off to the closest whole number.

Environmental and Social Activities to Date & External Commendations

◆Overview of Komatsu's Environmental and Social Activities to Date

1962	●Began support for the Flower Association of Japan since its founding
1991	●Earth Environment Committee established ●Company name changed in Japanese public relations to "Komatsu," with new corporate brand logotype
1992	●Komatsu Earth Environment Charter and Environmental Action Plan formulated
1994	●First Environmental Report published ●Board of Corporate Auditors established
1997	●Oyama Plant becomes first in Japanese construction equipment industry to acquire ISO14001 certification
1998	●Ethics Committee established (Renamed as Compliance Committee later) ●First edition of Komatsu's Worldwide Code of Business Conduct published
1999	●Executive Officer system established; Board of Directors reorganized ●Compensation Council established
2000	●First Global Environmental Affairs Meeting convened ●Environmental Report published; published annually thereafter
2001	●Compliance Department established
2002	●All seven Komatsu Group manufacturing facilities in Japan acquire ISO14001 certification
2003	●Environmental Affairs Department established
2004	●Corporate Social Responsibility Department established
2005	●First European Health, Safety, and Environment Meeting convened
2006	●All Komatsu Group manufacturing facilities in Japan attain zero emissions ●The KOMATSU Way explicitly defined and promotion activities launched
2007	●Seventh edition of Komatsu's Worldwide Code of Business Conduct published
2008	●Agreement concluded with Japanese NPO Japan Mine Action Service (JMAS) ●The Komatsu Group in Japan acquire ISO14001 integrated certification ●Development of PC200-8 hybrid hydraulic excavator announced ●Signed the United Nations Global Compact
2009	●Started Angola local reconstruction project with JMAS ●PBZ and PAS series of press brakes acquire MF eco machine* certification ●Basic agreement reached between Komatsu, Adaro and UT on the biodiesel project in Indonesia *The MF Eco machine Certification System is an eco-label established by the Japan Forming Machinery Association.
2010	●New medium- and long-term targets are set to reduce CO_2 emissions from manufacturing facilities ●Komatsu Earth Environment Charter is revised
2011	●Vehicle equipped with a new type of engine that meets Tier4 emission standards for Japan, the U.S.A. and Europe is introduced in the North American market ●Komatsu's "Declaration of Biodiversity" is established ●Local reconstruction project in Cambodia is completed with JMAS ●CSR themes are defined ●"Komatsu Green Park" opens in Komatsu City, the company's birthplace

◆External Commendations and Evaluations on Komatsu's Environmental Conservation and Social Activities

2010	May.	●Received the 2010 Chairman's Award from the Japan Construction Mechanization Association for developing the PC200-8E0 Hybrid Hydraulic Excavator
	Oct.	●Ranked 18th among 1,900 companies in Japan in the Nippon Foundation's Annual Corporate Performance Rankings
	Dec.	●Awarded the Good Enterprise Grand Prix from the Japan Investor Relations Association (JIRA) ●The Oyama Plant received the "Environment Minister's Commendation" for its activities for mitigating global warming ●Komatsu ranked 8th according to the "NICES" company rating system by Nihon Keizai Shimbun, Inc.
2011	Jan.	●Ranked 16th among 253 companies in Japan in Nikkan Kogyo Shimbun Ltd.'s Seventh Annual Corporate Performance Rankings ●Ranked 29th among 475 companies in the 14th Corporate Environmental Management Ranking by Nihon Keizai Shimbun, Inc.
	Feb.	●Awarded first prize for the 2011 Integrity Award from the Internal Control Council of Japan (ACFE)
	Apr.	●Komatsu Hybrid System for construction equipment receives the 2010 JSME Medal for New Technology from the Japan Society of Mechanical Engineers (JSME)

Komatsu Ltd. is included in the Socially Responsible Investing (SRI) indexes indicated below.

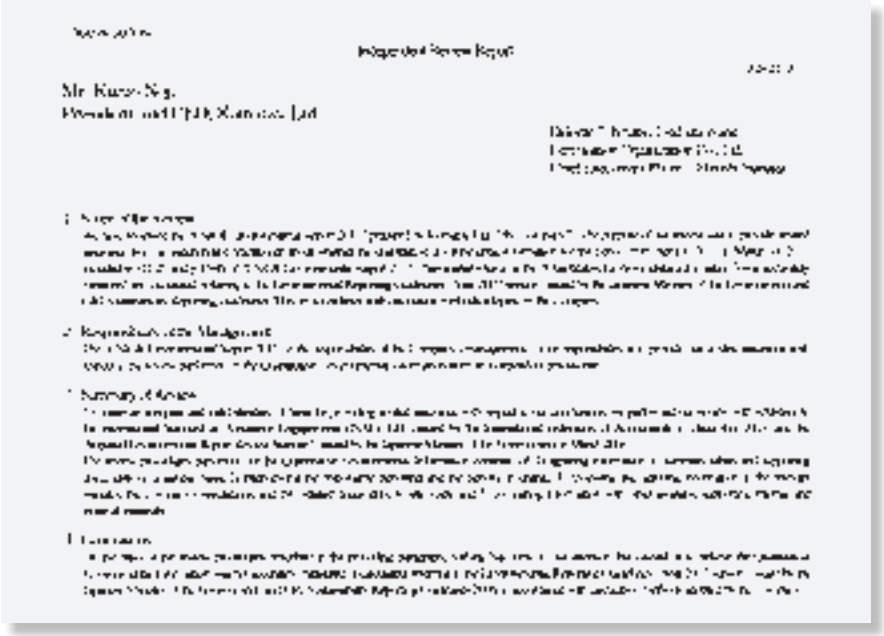
(As of September 2010)

Independent Review on CSR & Environmental Report 2011

Regarding the Independent Review

Komatsu views the independent review process as crucial for ensuring the integrity and objectivity of its CSR & Environmental Report. For that reason, Komatsu has received an independent review from Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd., a member of the Deloitte Touche Tohmatsu Group. The results are as represented below with regard to the information appearing in the CSR & Environmental Report 2011.

http://www.tohmatsu.com/teco/



◆Supplementary Explanation regarding the Conducting of Independent Review Procedures

As a supplementary explanation, the following provides an overview of the review procedures conducted during an independent review.

Supplementary explanation regarding independent review procedures

Step 1 Formation of plan for review process
- Confirmation of items to be included in the report
  (1) Scope of information
  (2) Information collection process
  (3) Information collection method
  (4) Level of importance of individual pieces of information
- Finalization of items to be reviewed and review methodology

Step 2 Execution of review
- Review of offices and persons in charge
- Inspections of business units

Step 3 Reporting on review results
- Reporting results of review (revisions and suggestions)

Step 4 Check of final version of repor
- Follow-up on issues identified during Step 3

Step 5 Submission of independent review report
- Submission of independent review report

Supplementary explanation regarding site visits to business units

1.Business units visited in this review:
- Komatsu Ltd. Head Office
- Awazu Plant

2.Visits to business units take place in a planned rotation. Records for business units not visited during this review were reviewed at the Komatsu Ltd. Head Office.

Executing a review at the Head Office
(with persons in charge of Development Division in photo)

Executing a review at the Awazu Plant

Scope of This Report

- **Komatsu (parent company) manufacturing facilities, specifically the following seven plants**
  The Awazu Plant [including the Komatsu Machinery Corporation and Komatsu Engineering Corp (Awazu Plant).], the Kanazawa Plant [including the Kanazawa-Daiichi Plant, the Kanazawa-Daini Plant and the Kawakita Plant], the Osaka Plant [including the Rokko Plant], the Ibaraki Plant [including the Mooka Plant] and the Oyama Plant [including Komatsu Cummins Engine Co., Ltd., Industrial Power Alliance Ltd. and GIGAPHOTON, Inc.], the Koriyama Plant, and the Shonan Plant [including KELK Ltd.].
- **Komatsu Group manufacturing facilities in Japan, specifically the above seven plants and the following five business units**
  Komatsu Utility Co., Ltd., Komatsu Castex Ltd., Komatsu Cabtec Co., Ltd.,, Komatsu NTC Ltd. [including Lossev Technology Corporation, Toyama Kiko Corporation, and D.S.K. Co., Ltd.] and Komatsu House Ltd.
- **Komatsu Group manufacturing facilities outside Japan, specifically the following 24 plants**
  Komatsu America Corp.,[Chattanooga Manufacturing Operation], [Peoria Manufacturing Operation], [Newberry Manufacturing Operation], Komatsu do Brasil Ltda., Hensley Industries, Inc. (The Americas), Komatsu UK Ltd., Komatsu Hanomag GmbH (Germany), Komatsu Mining Germany GmbH, Komatsu Manufacturing Rus, LLC, Komatsu Utility Europe S.p.A. (Italy), Stavmek s.r.o (Czech Republic), Komatsu Forest AB (Sweden), PT Komatsu Indonesia Tbk, PT Komatsu Undercarriage Indonesia, PT Komatsu Forging Indonesia, Bangkok Komatsu Co., Ltd., Bangkok Komatsu Industries Co., Ltd., L&T-Komatsu Limited (India), Komatsu India Pvt. Ltd., Komatsu Shantui Construction Machinery Co., Ltd., Komatsu (Changzhou) Construction Machinery Corporation, Komatsu (Changzhou) Foundry Corp., Komatsu (Shandong) Construction Machinery Corp, and Komatsu Undercarriage China Corp.
- **Komatsu Group manufacturing facilities including outside Japan:**All of the 36 above-mentioned offices are shown.

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