

Corporate Social Responsibility

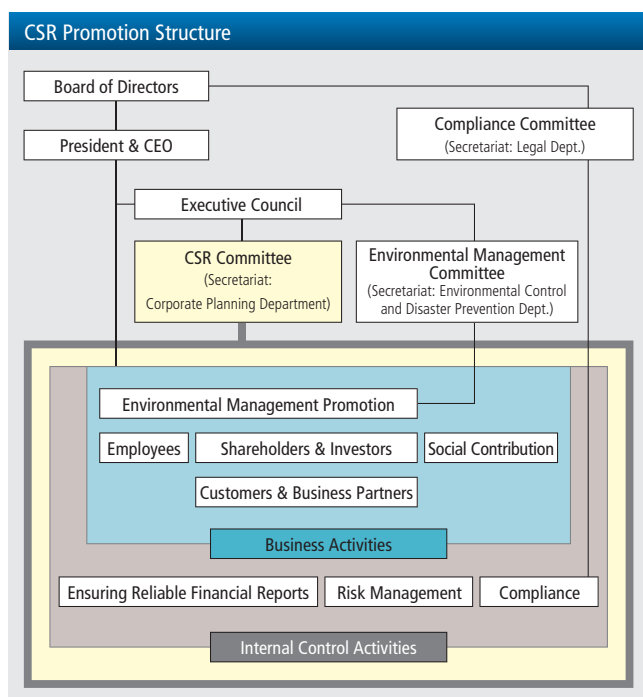
We at the Kobe Steel Group are keenly aware of our corporate social responsibility (CSR), an important element of Group management. We therefore pursue various environmental and social-contribution projects based on our Corporate Code of Ethics. Committed to strengthening our compliance measures and protecting the environment, we will continue to develop sustainably along with society by providing our diverse stakeholders with even greater levels of satisfaction.

CSR Promotion System

In 2006, we established a CSR Committee that is in charge of determining policies related to corporate social responsibility and providing centralized implementation.

To facilitate discussion, make proposals and conduct follow-up verification of important matters, we also established a Compliance Committee to advise the Board of Directors.

The CSR Committee's Report Production Subcommittee compiles information concerning CSR activities and publishes it each year in the form of a Sustainability Report.



Corporate Governance

With its operating environment undergoing major changes, Kobe Steel is being strongly urged to increase its self-monitoring capability and take on even greater responsibility than before. It is therefore keenly aware that it cannot survive nor raise its corporate value without strictly adhering to rules and regulations and effective corporate governance.

Based on this awareness, Kobe Steel established its Corporate Philosophy and Corporate Code of Ethics as corporate ideals as it works to improve its corporate governance capability.

Corporate Governance

(1) Basic Concept of Corporate Governance

Instead of a "corporate system with committees" that completely separates the supervising and execution of business operations, Kobe Steel opted for a "corporate system with a Board of Corporate Auditors" for the purpose of achieving more agile management driven by those with knowledge about Kobe Steel's businesses. In addition, aiming for an increasingly transparent and fair business structure, the Company is reinforcing its oversight functions by selecting outside directors and strengthening auditing functions, as explained below.

(2) Structure of the Board of Directors and Corporate Auditors

The Board of Directors is comprised of the president, key directors at corporate headquarters and directors of major business divisions to encourage active and extensive discussions.

In accordance with Japan's Companies Act, three or more corporate auditors are required to be appointed, the majority of whom should be outside corporate auditors. The Company appointed five corporate auditors, including three outside corporate auditors from the legal, financial and industrial areas, in order to secure more transparent and fair business management as well as to better supervise functions.

In addition, in June 2007 the Company appointed two outside directors who have no conflicting interests with the Company. These serve as parties that reflect fair and neutral opinions from outside the Company in Board of Directors' resolutions and enhance the supervisory functions and governance system at Kobe Steel.

The two outside directors attend the monthly Board of Directors' meetings, while working as members of the Independent Committee established in accordance with the Kobe Steel's Policy on a Large-Scale Purchasing of Its Shares. The Independent Committee would be convened should a large-scale purchasing of the Company's shares be proposed, over and above the regular meetings held twice a year to collect information about external factors, including the business environment surrounding the Company during the said period; reviews of business operations; upcoming Companies Act revisions and stock market conditions. By sharing knowledge and discussing the aforementioned topics, the Independent Committee members will prepare for contingencies, proposing fair and neutral opinions to the Board of Directors in an appropriate manner.

With the appointment of three outside corporate auditors and two outside directors, the Company's Board of Directors will have in attendance five parties who are separated from business execution involvement and hold fair and neutral positions. Accordingly, Kobe Steel's governance system has been improved.

The number of Board of Directors is stipulated to be "up to 15 members," in accordance with the Company's Articles of Incorporation. Kobe Steel's Board of Directors consists of 11 directors, including the two outside directors.

(3) Business Execution Structure

Appointed by shareholders at the General Meeting of Stockholders, directors who have legal responsibilities to shareholders, business partners and other stakeholders play a central role in business execution and control the business operations of principal business divisions.

Corporate officers, under the leadership of the directors, are responsible for the conduct of business affairs, and therefore occupy an important position at Kobe Steel. Although not constituting a legal body, officers are elected by the Board of Directors and carry out duties that the president assigns to them. To enable the Company to quickly respond to a rapidly changing business environment, the term of office of both directors and officers has been set at one year.

In 1999, Kobe Steel originally adopted an internal company management

system to increase profitability by business unit and to implement structural reform by selecting and concentrating management resources. However, in order to meet the changes of the times, the Kobe Steel Group shifted to a business unit system in April 2010, recognizing the importance of transcending boundaries between business units to maximize advantages from the Group's diverse businesses and reinforce Groupwide collaboration.

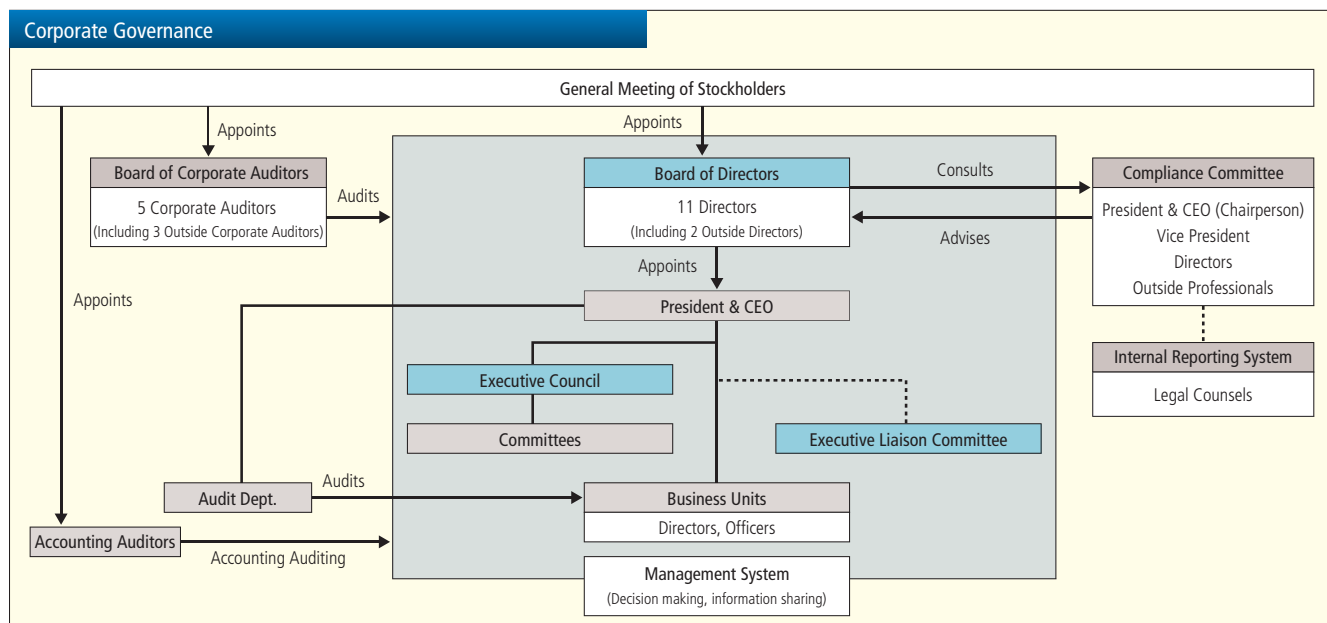
Under this system, the Group Executive Council (held quarterly) and the Executive Council (held semimonthly) are held to discuss the business direction, including the business strategy of the Group, as well as to confer over matters deliberated on in the Board of Directors' meetings. The Executive Liaison Committee (meeting quarterly)—composed of directors, corporate officers, executive technical advisors, and the presidents and directors of affiliates appointed by the president—shares information on important management issues.

Other committees are set up as forums for relevant parties to consider the president's and senior executives' advice before deliberating on issues that have a high degree of impact on the overall business of the Company.

Internal Audits, Corporate Auditors and Accounting Audit System

Kobe Steel established the Audit Department as an independent auditing body to conduct internal audits. Audits, especially those conducted in the head office departments for compliance, environment and information security, are carried out cooperatively or in partnership between the Audit Department and the respective administrative departments at Headquarters. In addition, the Audit Department audits and confirms the status of control conducted by the departments responsible for internal control and collaborates with measures such as offering feedback on the results of its findings.

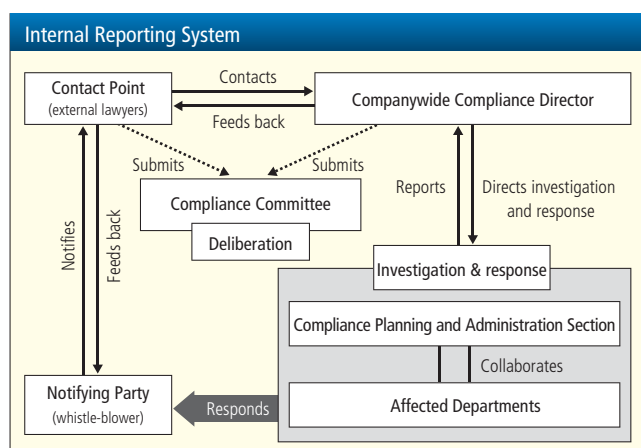
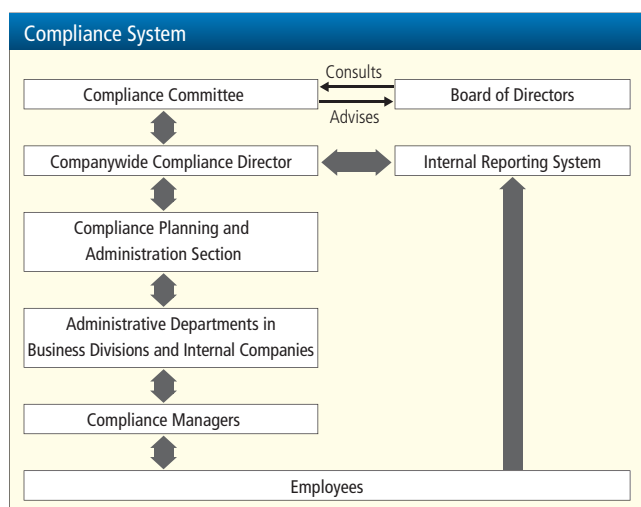
Accounting audits are conducted by three certified public accountants (CPAs) from KPMG AZSA & Co. Other CPAs and junior accountants from KPMG AZSA & Co. are responsible for assisting with the accounting audits. Accounting auditors conduct the audits with regard to internal controls while exchanging information with the departments responsible for internal control.



Corporate auditors routinely meet with accounting auditors to coordinate internal audits, corporate audits and accounting audits and closely cooperate through the exchange of views about the audit system, the audit plan and audit status. Also, when necessary, corporate auditors accompany accounting auditors on their audits of business sites and receive timely reports about the progress of those audits. Furthermore, corporate auditors are routinely informed about audit policies and plans by the internal audit department. Corporate auditors also maintain close cooperation with others through reports they receive, from both the Internal Audit Department and the departments responsible for internal control, in such areas as the status of compliance, risk management and other internal control system enforcement, thereby enabling them to conduct efficient audits.

Compliance Committee

The Compliance Committee was established as an advisory body to the Board of Directors in June 2003 and has undertaken various activities. Specifically, the Compliance Committee works to raise the effectiveness of compliance management not only through the drafting of compliance programs and confirming the progress status of them, but also by submitting measures related to reports made through the Internal Reporting System for discussion at Board of Directors' meetings.



Corporate Code of Ethics

The Corporate Code of Ethics sets out principles and guidelines established to maintain legal compliance and make us a better company. The Corporate Code of Ethics consists of the Corporate Ethical Principles, Standards of Corporate Conduct and Implementation Guidance. Major group companies have also formulated similar policies.

The Corporate Ethical Principles set forth the standards by which Kobe Steel, its directors, officers and employees must comply in conducting the Company's various business activities and cover the following principles.

From Kobe Steel's Corporate Ethical Principles

Kobe Steel will:

1. Operate business fairly and honestly and comply with applicable laws, rules and principles of society.
2. Contribute to society by offering excellent products and services. In particular, pay attention to product safety and protection of personal information of customers and partners.
3. Create a safe, comfortable and productive workplace and respect the individuality and differences of employees.
4. Respect the interests of stakeholders. Maintain healthy, positive relations with society at large including customers, partners, employees and shareholders.
5. Be a good corporate citizen that contributes to local communities.
6. Devote itself to protecting the environment and creating a comfortable society.
7. Respect the culture and customs of other nations and contribute to the growth and development of their communities.

Standards of Corporate Conduct were specifically established as particularly important standards of behavior that allow the Corporate Ethical Principles to be put into practice in employees' daily work activities. An operational manual has been created to explain in greater detail each item set out in the Standards of Corporate Conduct so that employees are thoroughly trained.

Risk Management Activities

Aiming to achieve an organizational culture that is highly sensitive toward compliance, Kobe Steel has been working on new risk management activities since fiscal 2009.

These activities involve dedicated staff at corporate Headquarters organizing and classifying risk items in light of changes to laws and in society. They present their findings as "common risks" to all business departments, and as much as possible incorporate examples of incidents that had occurred in the past to explain applicable laws or revisions with regard to each item. Each business department adds to the "common risks," those risks that are unique to its own business, reviews them and compiles its own risk management plan. Moreover, based on inspection requests from Headquarters at the end of the fiscal year, all departments verify their organization's risk management status.

More specifically, although each respective department receives risk management guidelines from corporate Headquarters, they identify the risk,

including compliance, in their business, and plan and put into practice countermeasures. Upon inspection of the results, they are again linked into the following year's activities. In this way, Kobe Steel aims for a steady risk management Plan-Do-Check-Action (PDCA) cycle that includes compliance at each department.

Kobe Steel places the maintenance of safety and compliance as a major premise in its business activities. An organizational culture that is highly sensitive to compliance developed through these ongoing risk management activities will continue to underpin Kobe Steel's wide-ranging business activities.

Group Company Compliance System

Each Kobe Steel Group company has set up a Compliance Committee, established a Corporate Code of Ethics and introduced an Internal Reporting System. A Compliance Officer and Compliance Promotion Manager have been appointed in each company and they pursue their efforts in coordination with Kobe Steel. Group companies also engage in risk management activities.

Basic Policy for Parties Affecting Policy Decision of Kobe Steel's Financial and Business Affairs (hereinafter referred to as the "Basic Policy on Corporate Control")

(1) Basic Policy

Kobe Steel, Ltd. (hereinafter referred to as "Kobe Steel" or the "Company"), as a listed company, does not object to any large-scale purchasing of its shares (hereinafter referred to as "Large-Scale Purchase" or "Large-Scale Purchasing") involving a change of its corporate control if such purchase facilitates the protection and enhancement of its corporate value and ultimately, the common interests of its shareholders in the course of open stock trading.

However, Japanese capital markets have recently witnessed a number of instances in which corporate shares have been rapidly purchased on a massive scale without adequate information being disclosed to public shareholders or investors. This type of large-scale purchase or proposals may cause irreparable harm to Kobe Steel or may not provide its shareholders with necessary information or time for the shareholders to determine whether to accept these large-scale purchases. These purchases may harm Kobe Steel's corporate value and ultimately, the common interests of its shareholders.

Particularly, Kobe Steel is engaged in various businesses, such as those in the materials sector and the machinery sector, and as these businesses have broad fields, there are various stakeholders and synergies to be borne by various businesses. Therefore, if Large-Scale Purchasers, who do not have an adequate understanding of these relationships with the stakeholders and synergies among the businesses, were to control the finances and the business policies of Kobe Steel, there is a possibility that the corporate value of the Company, and ultimately, the common interests of its shareholders would be impaired.

Therefore, Kobe Steel believes that for a party to have an impact on its financial and business policy decisions that party must be one that fully understands the Company's management principles, the sources of its corporate value, and the relationships of mutual trust it shares with its stakeholders, which are necessary and indispensable for the enhancement of the corporate value and ultimately,

the common interests of its shareholders. Such a party must also be able to protect and enhance Kobe Steel's corporate value and ultimately, the common interests of its shareholders as a result. In contrast, Kobe Steel views any party involved in an aforementioned large-scale purchase or proposal to be unsuitable as a party that will have an impact on its financial and business policy decisions.

With the above in mind, Kobe Steel believes it is necessary to establish rules where the Large-Scale Purchasers are required to provide to the Board of Directors necessary and sufficient information in connection with the Large-Scale Purchasers in advance, and to commence the Large-Scale Purchases only after the expiry of a certain period time for examination and evaluation by the shareholders and the Board of Directors.

(2) Initiatives to Prevent Unsuitable Parties from Having an Impact on Kobe Steel's Financial and Business Policy Decisions in Light of Its Basic Policy on Corporate Control

At the General Meeting of Stockholders held on June 24, 2009, a plan to prevent Kobe Steel's financial and business policies from being controlled by inappropriate parties ("the Plan") was approved.

OVERVIEW OF THE PLAN

This Plan stipulates the following procedure should a Large-Scale Purchase of the Company's shares be implemented.

(i) Providing Required Information

With respect to Large-Scale Purchasers, it is necessary for shareholders and the Board of Directors to determine whether the proposed Large-Scale Purchase safeguards and further improves corporate value as well as the common interests of shareholders. Therefore, information is required prior to the Large-Scale Purchase about the purpose of the share acquisition and the post-share acquisition management policy.

However, Kobe Steel shall not engage in operations that deviate from the aim, such as demanding of the Large-Scale Purchasers information disclosure exceeding the standards necessary to appropriately decide the question of the Large-Scale Purchases, or that endlessly necessitate providing the Large-Scale Purchasers with required information.

(ii) Establishment of an Independent Committee

To prevent its Board of Directors from making arbitrary judgments and ensure that procedures under the share purchasing rules remain objective, fair, and reasonable, an Independent Committee has been established as an organization independent from the Board of Directors. The Independent Committee is composed of outside attorneys, certified public accountants, tax accountants, academic experts and outside managers and directors.

(iii) Examination and Evaluation

After disclosing that it has received necessary and sufficient information and secured the periods of time listed below from such disclosure date, the Independent Committee will report to the Board of Directors on whether it should initiate takeover defense measures, based on its examination and judgment of the legitimacy of the Large-Scale Purchase.

In the case of a takeover bid of all of the Company's shares with Japanese yen in cash	60 days
Other than that above	90 days

Should the Independent Committee rationally judge it necessary for the evaluation period of the Large-Scale Purchase be extended, the Company shall extend such period by up to 60 days, and the relevant Large-Scale Purchase shall be implemented after the extended evaluation period.

As a general rule, the resolutions of the Independent Committee shall be made by a majority vote with all members in attendance. However, should it be deemed unavoidable, the Independent Committee's resolution may be made by a majority vote of those members present at a meeting attended by a majority of Independent Committee members. However, should the Independent Committee recommend that the Board of Directors take defensive measures, the resolution of such recommendation will require at least one affirmative vote from a committee member who serves as an outside director of the Company.

(iv) Initiation of Takeover Defense Measures

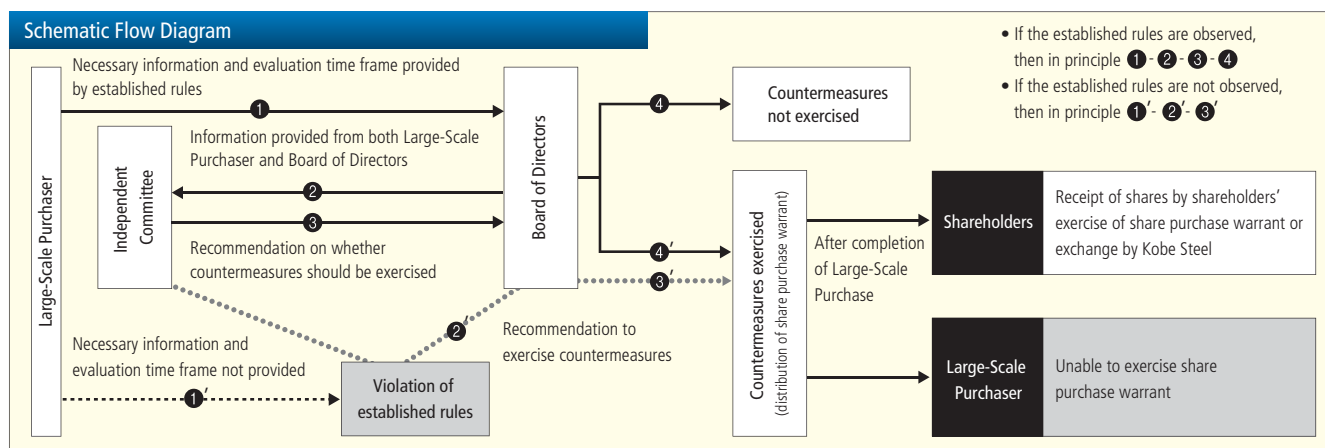
The Board of Directors decides whether to initiate takeover defense measures after giving serious consideration to the Independent Committee's report. The takeover defense measures involve the distribution of share purchase warrants to shareholders under certain terms and conditions, which include prohibiting the exercise of the share purchase warrants by Large-Scale Purchasers. Therefore, exercising these share purchase warrants has the effect of reducing the ratio of the aforementioned Large-Scale Purchasers' voting rights and

blocking any Large-Scale Purchase feared to be detrimental to corporate value and the common interests of shareholders.

In addition, as part of the share purchase warrants' terms and conditions, the Board of Directors shall not attach any redemption clauses to the effect that the Company will provide cash as consideration for the redemption of those warrants held by the Large-Scale Purchasers.

(v) Effective Term

The effective term is set as the date when the first Board of Directors' meeting to be held after the General Meeting of Stockholders, planned to be held in June 2011, has ended.



Note: For details, please refer to the press release "Amendment to Kobe Steel, Ltd.'s Policy on Large-Scale Purchasing of its Shares (Anti-Takeover Measures)" released on April 28, 2009 on the Company's website (<http://www.kobelco.co.jp/english>).

Environmental Management Promotion

The Kobe Steel Group recognizes that the obligation to protect the global environment is its most urgent task and, therefore, has adopted the mission to pass on a healthy world to future generations. The Kobe Steel Group formulated a Basic Environmental Management Policy and, accordingly, stepped up efforts to promote environmental management in every facet of its business activities. An Environmental Management Committee is in place to address environmental management issues for the entire Group.

Basic Environmental Management Policy

Further Enhancing Enterprise Value through Groupwide Environmental Management

—Improving the Group's Environmental Capabilities—

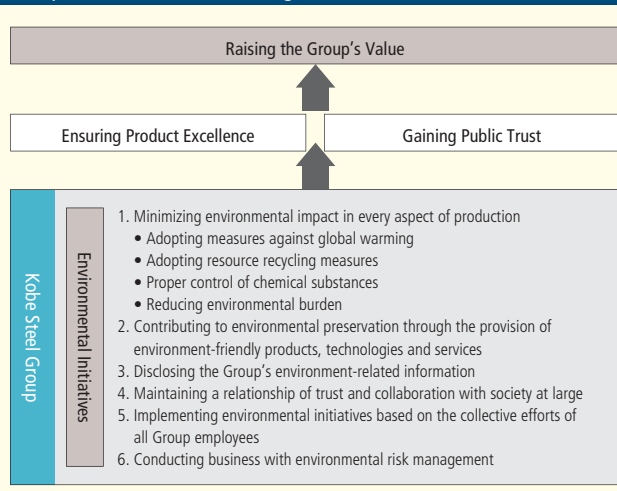
Aiming to remain an advanced environmental business enterprise, the Kobe Steel Group shall fulfill its corporate social responsibilities, improve its environmental capabilities and raise its corporate value by putting the following three principles into practice:

1. Reducing the environmental impact from production
2. Contributing to efforts to reduce environmental impact through environment-friendly products, technologies and services
3. Maintaining a relationship of trust and collaboration with society at large

To promote Groupwide environmental management, we implement activities based on six principal initiatives. (See chart below.)

Adhering to relevant laws and regulations, the Kobe Steel Group rigorously pursues environment-friendly manufacturing in every aspect of its operations, including the siting and construction of its facilities, the equipment it uses, and procurement, production, distribution and product recycling. The Group provides products, technologies and services that help reduce its environmental impact with the full participation of its employees.

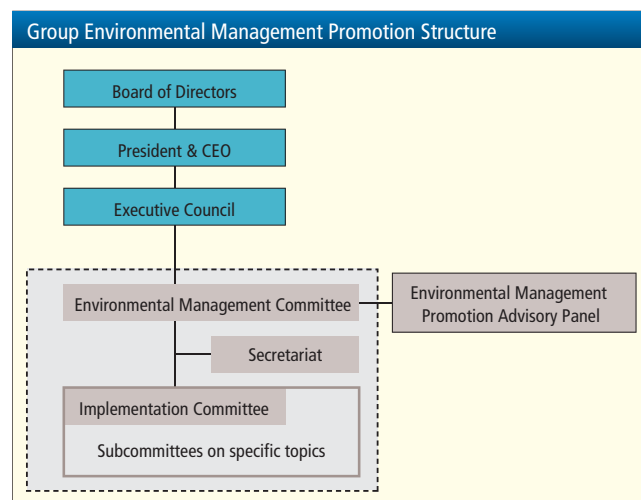
Groupwide Environmental Management Initiatives



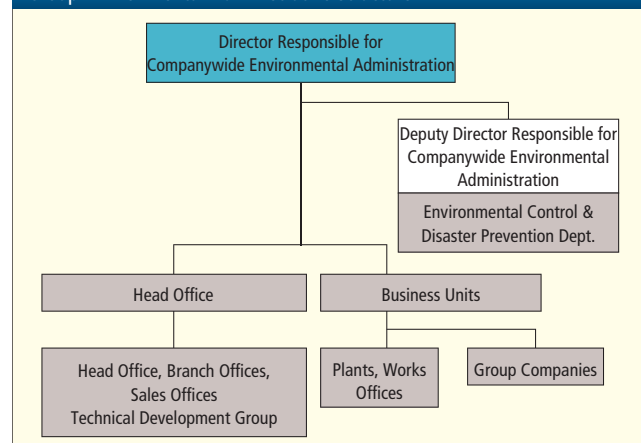
Group Environmental Management System

Environmental management in the Kobe Steel Group is promoted mainly through the Environmental Management Committee. This committee, reconstituted in 2002 from the Global Environment Committee originally set up in 1992, works to facilitate a strong management response to a range of environmental problems. In particular, subcommittees have been set up to study such specific issues as global warming countermeasures and to promote activities to make a swift and well-targeted response.

In addition, fiscal 2009 saw the setting up of an Environmental Management Promotion Advisory Panel within the Environmental Management Committee to serve as a conduit for pertinent advice received from external experts.



Group Environmental Administrative Structure



Measures against Global Warming

In recent years, addressing the problem of global warming has been growing in importance. The Kobe Steel Group is tackling this issue by moving forward on R&D and rationalizing energy use through energy conservation, among other steps taken across its various business activities. The Group is working to achieve the goals of each industry's voluntary action plans as well as to further conserve energy and reduce CO₂ emissions.

Energy Conservation in Production Processes

In fiscal 2009, the Kobe Steel Group as a whole consumed 209PJ (petajoules) of energy. Of this amount, approximately 95% was used by the Iron and Steel Segment.

Kobe Steel has implemented operational measures at its plants and other production facilities—including the introduction of such state-of-the-art energy conservation technologies as the deployment of highly efficient equipment, continuous processes and exhaust heat recovery—and has also thoroughly implemented combustion and exhaust heat management. As a result, Kobe Steel's business segments achieve the world's highest energy efficiency levels. Moving forward, Kobe Steel will introduce increasingly sophisticated energy conservation technologies and further improve its operations.

Iron and Steel Business

In the two decades that followed the 1970s oil shocks, Kobe Steel advanced the efficient use of energy in its Iron and Steel Business by installing energy-saving equipment for continuous and streamlined processes and exhaust-heat recovery. Since the 1990s as well, Kobe Steel has been promoting enhanced exhaust-heat recovery equipment and equipment with greater efficiency and throughout the 2000s has tackled measures that further effectively use waste resources. As a result, given the energy augmenting factors associated with

products that are higher in added value and the strengthening of environmental measures, we have achieved energy savings of more than 30% compared with the early 1970s.

In fiscal 2009, the impact of reduced production volume meant that the volume of energy consumed and CO₂ emitted declined approximately 7% compared with the previous fiscal year, while CO₂ emissions were reduced by 12% against fiscal 1990. Energy consumption and CO₂ emissions per metric ton of goods produced worsened slightly from the previous fiscal year, again as a result of the impact of the significant decline in production, although it still represented an improvement of around 12% compared with fiscal 1990.

From fiscal 2010, we anticipate that the volume of energy consumed and CO₂ emissions will increase in line with production volume recovery. However, we are striving to meet targets, taking into overall consideration improved operations for each process and the deployment of highly efficient gas turbines in the Kakogawa Works, in tandem with mechanisms put into effect under the Kyoto Protocol and other efforts.

Aluminum and Copper Business

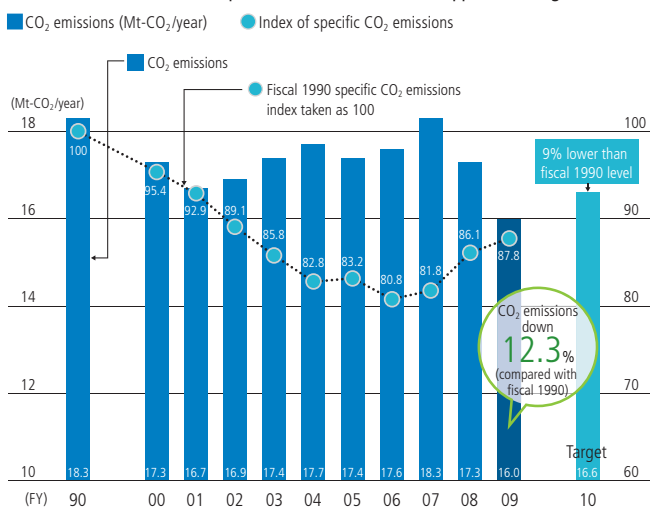
At the Aluminum and Copper Business' manufacturing locations—the Moka Plant, Chofu Works and the Daian Plant—we are steadily switching from such petroleum-based fuels as heavy oil and LPG to natural gas. In tandem with this shift, we are working to make combustion equipment more efficient and to better recover exhaust heat.

In fiscal 2009, the effect of substantially reduced production volumes was an over 10% reduction in CO₂ emissions compared with the previous fiscal year. On the other hand, the reduced production levels had a marked impact on energy used per metric ton of goods, which deteriorated by approximately 3%.

From fiscal 2010, we will continue to shift fuel types and improve consumption efficiency, install inverter drive motors and take other steps linked to the reduction of energy consumption.

Iron and Steel Business

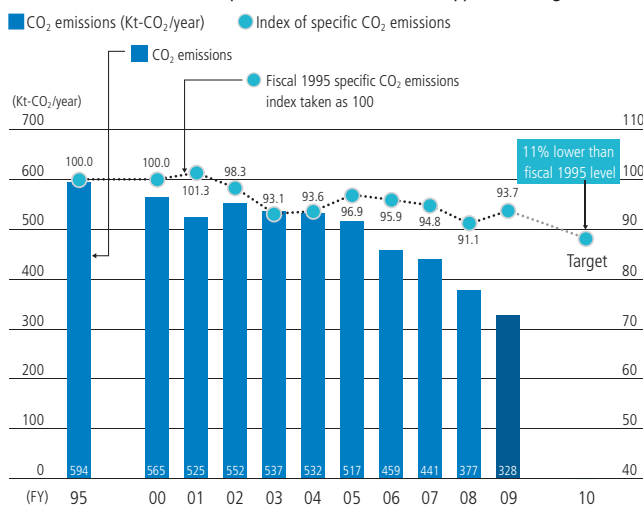
Trends in CO₂ Emissions and Specific CO₂ Emissions Index (Approximate figures)



Note: Aggregate figures for the Iron and Steel Business, including coke production. Based on heat generation volumes listed in Comprehensive Energy Statistics (Resources and Energy Agency) and emissions listed in the National Greenhouse Gas Inventory Report of Japan; fiscal 2009 statistics for emissions of purchased electricity have not yet been disclosed, so those from fiscal 2008 were used.

Aluminum and Copper Business

Trends in CO₂ Emissions and Specific CO₂ Emissions Index (Approximate figures)



Contributing to Reduced CO₂ Emissions through "Only One" Technologies and Products

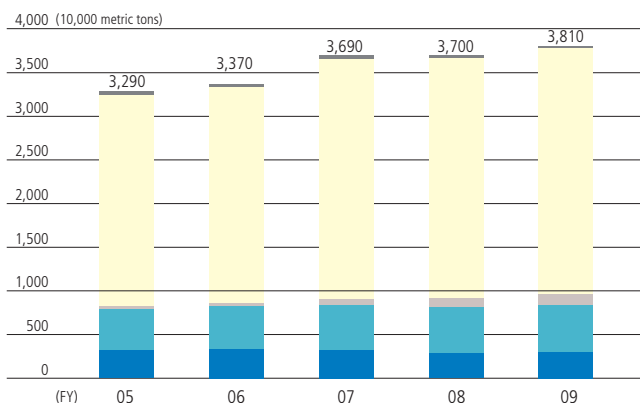
Whether it is in such materials businesses as iron and steel or aluminum and copper, or in the fields of machinery or engineering, the Kobe Steel Group brings its strengths in diverse management capabilities to bear as it leverages its Only One technologies and products to reduce CO₂ emissions. Kobe Steel estimates that in fiscal 2009, the CO₂ emissions reduction effect, both in Japan and overseas, provided by Group products amounted to approximately 38.1 million metric tons. Kobe Steel will continue to contribute to the realization of a low-carbon society through its distinctive *monozukuri* (manufacturing) capabilities.

THE CO₂ EMISSIONS REDUCTION EFFECT PROVIDED BY GROUP PRODUCTS, BOTH IN JAPAN AND OVERSEAS IN FISCAL 2009:

approximately **38.1** million metric tons

CO₂ Emissions Reduction by Sector

■ Automobile
 ■ Air-conditioning
 ■ Industrial and Construction Machinery
 ■ Iron and Steel Plants
 ■ Other



Automobiles: Steel and Aluminum Products

CO₂ EMISSIONS REDUCTION EFFECT THROUGH STEEL AND ALUMINUM PRODUCTS THAT MAKE AUTOMOBILES LIGHTER:

approximately **3** million metric tons

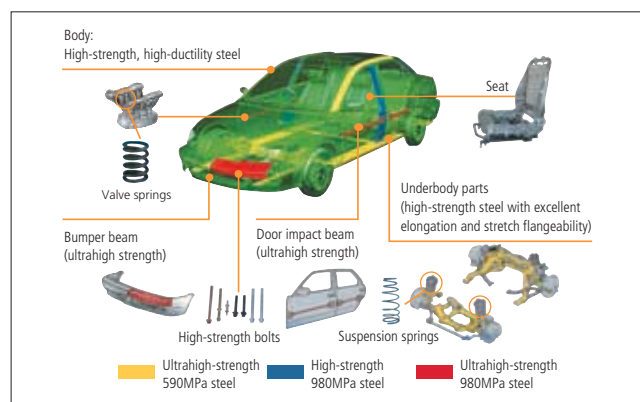
Calculated based on Japan Iron and Steel Federation and Japan Aluminium Association figures; results from fiscal 2009 take into account an automobile's average service life.

Automobile weight reduction with iron and steel products

With steel wire rod and bar, Kobe Steel develops and mass produces the world's strongest spring steel and bolt steel, contributing to lighter automobiles and higher performance engines. Kobe Steel spring steel for automotive suspension systems and engine intake valve springs enable weight reductions of 20% and 50%, respectively, compared with conventional products.

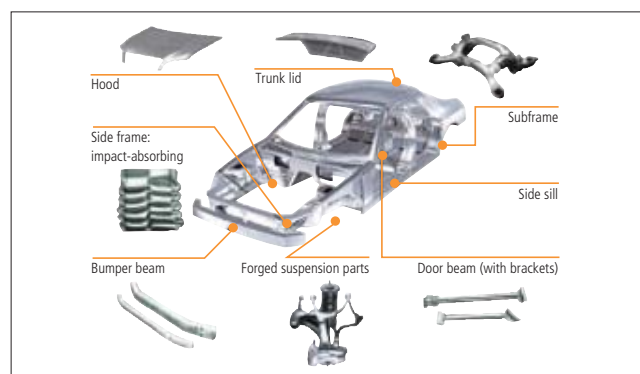
Kobe Steel is also developing and implementing a production and supply structure for high-strength steel sheet, utilizing the chemical composition expertise gained from specialty steels for wire rod and bar and the microstructure control from heating and cooling processes. Realizing high tensile strength and exceptional formability, high-strength steel sheet is an ideal material for

reducing the weight of the structural components that make up the vehicle body, seat, bumper and door impact beams as well as other parts.



Aluminum products that reduce vehicle weight

Kobe Steel was an early adopter of aluminum materials to reduce vehicle weight. Aluminum is particularly effective as panel sheet used for hoods and doors, for such extruded parts as bumpers, and for such forged underbody components as suspensions, which contribute to making vehicles more fuel efficient.



Air-Conditioning

CO₂ EMISSIONS REDUCTION EFFECT THROUGH HIGH-PERFORMANCE HEAT EXCHANGERS EQUIPPED WITH HIGH-PERFORMANCE INNER-GROOVED COPPER TUBE FOR AIR CONDITIONERS:

approximately **5.3** million metric tons

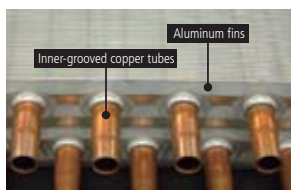
Determined based on the Japan Copper and Brass Association's calculation method; results from fiscal 2009 take into account air conditioner life cycles.

Copper tube in air conditioner heat exchangers reduce CO₂ emissions

Given their high heat transfer performance and conductivity, copper products are playing a major role in improving energy savings for air conditioners, control equipment and other products. Particularly in the case of air conditioners, the development of high-performance grooved copper tubes has further raised the ability to transfer heat. This is possible by processing grooves into the interior surface of the copper tubes used in heat exchangers. Compared with 1990, there has been a two-fold improvement in air conditioner coefficient of performance (COP*); approximately one-third of this is thought to be the result of the higher performance of heat exchangers equipped with inner-grooved

copper tubes. Kobe Steel provides about 30% of the copper tubes used in air conditioners, contributing to the reduction of CO₂ emissions.

* The COP index is used to state air conditioner performance, comparing the ability to heat and cool against electric power consumed.



Cutaway view of heat exchanger for air conditioner

Industrial Machinery

CO₂ EMISSIONS REDUCTION EFFECT FROM COMPRESSORS, HEAT PUMPS, EQUIPMENT THAT USES STEAM AND OTHER INDUSTRIAL MACHINERY:

approximately **900,000** metric tons

Results from fiscal 2009 take into account product life cycles.

Efforts with compressors that consume approximately 30% of industrial power

Compressors consume 25% to 30% of overall electric power volume at a typical Japanese factory. To improve upon this, the Kobe Steel Group focused its accumulated machinery and engineering technologies and developed the KOBELION™, a standard compressor that realizes a significant reduction in energy consumption. Having become a mainstay product, the KOBELION™-VS/VX series maximizes the inverter control range to curb wasted power consumption. Responding to various load fluctuations, this product realizes low-energy operation that cuts power consumption by approximately 40%.

Utilization of untapped steam energy spreads

The Kobe Steel Group-developed, screw-type compact steam energy generator SteamStar® utilizes steam emitted from compact boilers used in small- to mid-sized manufacturing facilities to enable highly efficient power generation. Compared to the 30% to 40% power generation efficiency of traditional turbine-type power generators, SteamStar® realizes efficiency of 60%, the world's highest. If 10% of the approximately 250,000 small boilers in Japan were SteamStar®, it has been calculated that 5 million metric tons of CO₂ emissions could be cut annually.



SteamStar®, recipient of the 2008 Excellent Energy-Saving Equipment Award

The industry's most energy-efficient water-cooled screw chiller

In the field of water-cooled screw chillers, Kobe Steel has developed the High Efficiency Mini series that realizes high energy efficiency. The main product in the lineup, High Efficiency Mini II, achieves the highest ranked energy efficiency of COP6.0—six units of heat energy are removed for every one unit of energy consumed—to realize a 70% cut in CO₂ emissions over a year.

Construction Machinery

CO₂ EMISSIONS REDUCTION EFFECT FROM HYDRAULIC EXCAVATORS:

approximately **400,000** metric tons

Results from fiscal 2009 take into account product life cycles.

CO₂ emissions reduction effect from construction machinery

Launched in 2006 by Kobelco Construction Machinery Co., Ltd., the ACERA GEOSPEC hydraulic excavator complies with Tier III regulations that control NO_x and hydrocarbon emissions and has improved fuel efficiency by 20% compared with conventional machinery. ACERA GEOSPEC significantly cuts operational noise and vibration while offering advanced features that consider both the environment and people. On a factory delivery basis, approximately 50,000 units of this model have been sold both in Japan and overseas. In fiscal 2009, ACERA GEOSPEC contributed to CO₂ emissions reductions of approximately 400,000 metric tons through improved fuel efficiency.



The eco-friendly ACERA GEOSPEC hydraulic excavator

Iron and Steel Plants

CO₂ EMISSIONS REDUCTION EFFECT FROM IRON AND STEEL PLANTS:

approximately **28.2** million metric tons

The effect of annual reduction that took place in MIDREX® and FASTMET® plants in operation in 2009

The MIDREX® Process: A way to slash CO₂ emissions by using natural gas to convert iron ore into direct reduced iron

Iron ore has conventionally been reduced using lump ore or coking coal. With the MIDREX® Process, however, natural gas is used as a reducing agent, enabling substantial reductions to CO₂ emissions. The MIDREX® Process, the license of which is held by Kobe Steel, is used in approximately 60% of direct reduced iron production worldwide. There are presently about 60 direct reduction plants around the world that use the MIDREX® Process.

The ITmk3® Process: Tapping unutilized resources with third-generation ironmaking to open up a low-carbon future

Originally there was the blast furnace process, then the Kobe Steel Group developed the MIDREX® Process, and now there is a third generation of ironmaking, the proprietary ITmk3® Process. Taking advantage of low-grade iron ore and steaming coal that are difficult to use in conventional blast furnaces, the ITmk3® Process uses a rotary hearth furnace to produce high-purity iron nuggets. There is no need for sintering equipment for the lump ore and coke ovens for the coking coal required by blast furnaces. In addition to being able to reduce the environmental impact of NO_x and SO_x, there is the potential to reduce CO₂ emissions by approximately 20% compared with ironmaking using blast furnaces in emerging markets or at mine sites.