

# CSR Report 2012



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## Editorial Policy

The JFE Group CSR Report 2012 presents the basic policy, activities and achievements in FY2011 in terms of environmental and responsibility activities related to the businesses conducted by JFE Holdings, Inc., the holding company of the JFE Group, and its operating companies. The report was edited and produced in accordance with the Guidelines for Environmental Reports (2007 edition) issued by Japan's Ministry of the Environment and the Sustainability Reporting Guidelines Version 3.0. of the Global Reporting Initiative (GRI).

### Organizations Covered in the Report

#### • Holding company:

JFE Holdings, Inc.

#### • Operating companies of JFE Group:

JFE Steel Corporation, JFE Engineering Corporation, Universal Shipbuilding Corporation, and Kawasaki Microelectronics, Inc.

\*Universal Shipbuilding Corporation will merge with IHI Marine United Inc. on December 1, 2012 to become Japan Marine United Corporation (at the time of this printing, it was possible that this date might be pushed back due to the progress of ongoing approvals overseas).

\*JFE Holdings sold its shares in Kawasaki Microelectronics Inc. to MegaChips on July 1, 2012.

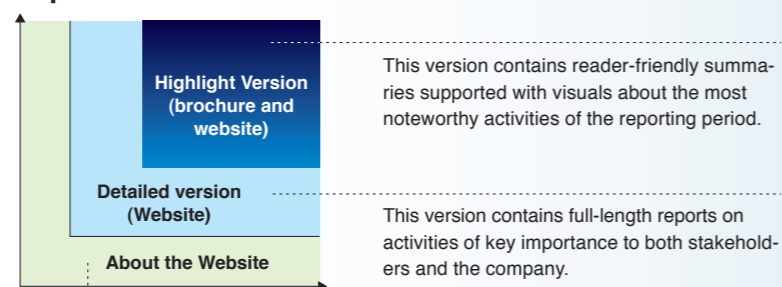
#### • Companies controlled by operating Companies:

241 (194 consolidated subsidiaries and 47 equity-method affiliates)

### Reporting Period

The CSR Report 2012 mainly covers activities carried out in FY2011 (April 1, 2011 to March 31, 2012), but also describes selected activities that occurred before or after this period.

### Report Media



### Compilation of Environmental Data

Supplementary data on environmental initiatives (PDF)

### Website Profile

JFE Group outline, corporate vision, corporate governance, etc.

### Website Investor Information

JFE Group management information, financial data, stock and rating information, etc.

### JFE GROUP TODAY 2012

JFE Group management information, financial data, stock and rating information, etc.  
(Available in print and online)

### Website CSR

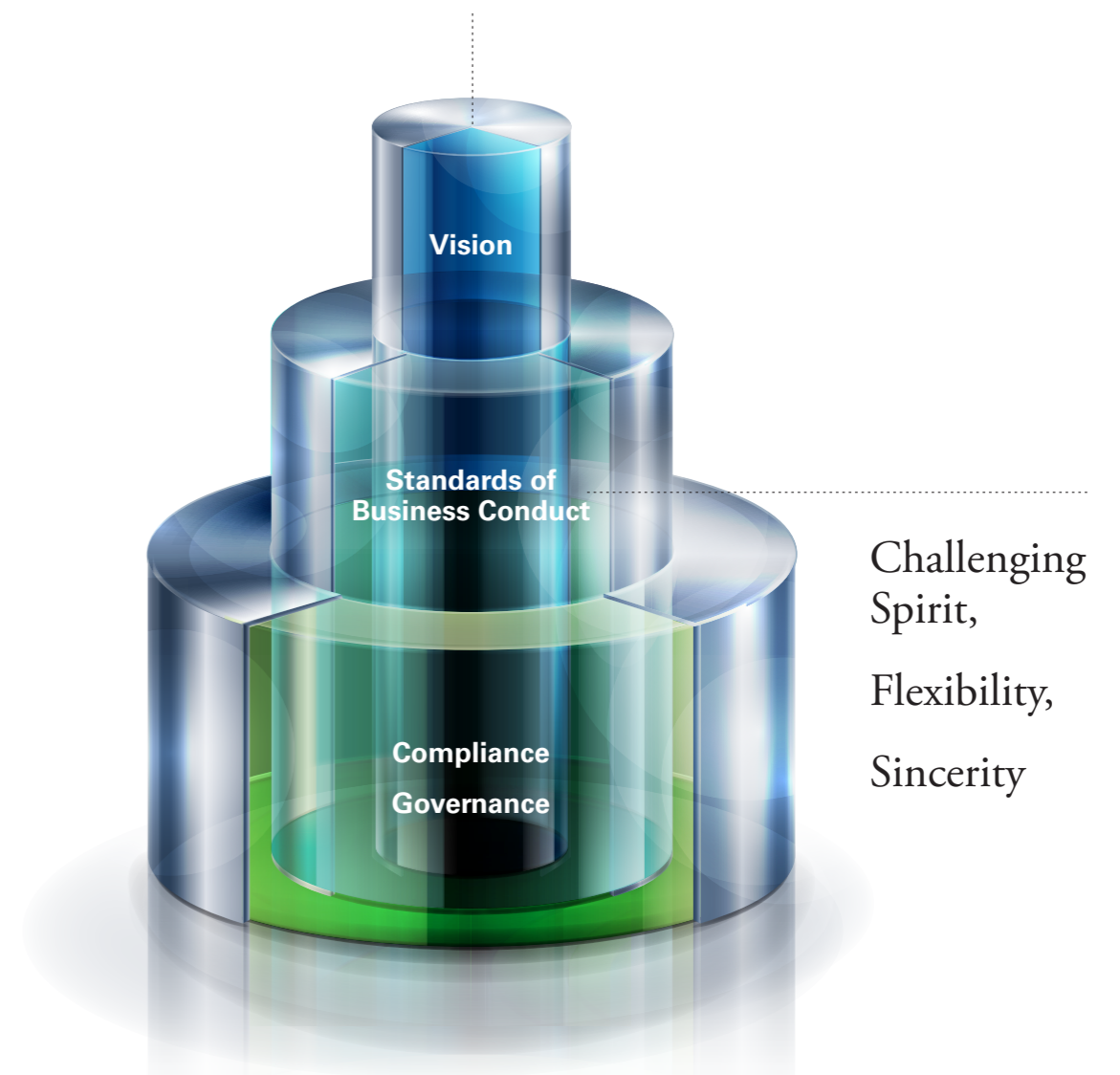
JFE Group's environmental and other responsibility initiatives

### Website ecobeing

Information about ensuring a healthy planet for future generations. Website

## JFE Group CSR

The JFE Group is continuously contributing to society with the world's most innovative technology.



Putting principles into practice is the heart of CSR.

The JFE Group puts its corporate values and standards of business conduct into practice to fulfill its corporate vision of contributing continuously to society with the world's most innovative technology. The Group diligently implements initiatives targeting key issues, including safety, disaster prevention, product quality and human rights, in addition to compliance and environmental protection. The JFE Group conducts business from the perspective

of all stakeholders, including customers, clients, shareholders, investors, community residents, and employees, steered by an equitable, fair, and transparent corporate governance system. Following the spirit of our Corporate Values, "Challenging Spirit, Flexibility and Sincerity," the JFE Groups hopes to continue earning the trust of society by undertaking CSR with integrity.

“The JFE Group is always looking to use its world-leading technologies to contribute to society.”

**Q What are JFE's main social responsibilities?**

**A** The JFE Group celebrated its 10th anniversary this year. During this time, the Group has worked to strengthen its business structure and enhance corporate value amid a challenging business environment impacted by the global financial crisis and the Great East Japan Earthquake. As the Group enters its second decade, it is returning to its core foundations not only to establish a corporate structure for increasingly sustainable growth, but also to fulfill its mission of contributing to society through business. To this end, the company introduced four basic policies.

The first is to strengthen CSR and corporate governance. We are striving to ensure rigorous compliance, the cornerstone of a trusting relationship with society, by managing our business with fairness, objectivity and transparency.

The second is managing with greater environmental awareness. The prevention of global warming and other global environmental problems are core issues for our business, so we are working aggressively to reduce our environmental impact and help protect the environment. By providing cutting-edge technologies, we also are contributing to more sustainable societies.

The third policy is promoting diversity. In line with our increased presence in the global market, we are diversifying our workforce and using our overseas business experience to enrich their development.

And finally, the fourth policy is strengthening both our financial structure and returns to shareholders. Our goal is to earn stakeholders' trust by pursuing investments that target group growth and by creating a healthy financial structure while keeping returns to shareholders among our top priorities.

**Q What is the role of your business activities in society?**

**A** The JFE Group is active in a range of fields centered on the steel business, including engineering and shipbuilding. We are always considering how we can utilize our abundant world-class

technologies to address social issues in various fields, such as optimizing energy usage and protecting the environment.

In the steel business, we work to prevent global-warming through our "Three Ecos" initiatives: Eco-Products, Eco-Processes and Eco-Solutions. Eco-Products are energy-saving products, such as reduced-weight automobiles and high-efficiency electric cars, both of which help to reduce CO<sub>2</sub> emissions. In 2011, our UNI HITEN® steel became the first 440 MPa galvanized steel plate to be used for automotive hood panels. Eco-Processes refer to advanced, low-CO<sub>2</sub> steel manufacturing technologies. In 2011, all JFE Group steel production facilities adopted an iron-ore sintering process powered by hydrogen gaseous fuel, called Super-SINTER®, which reduces CO<sub>2</sub> emissions. And finally, our Eco-Solutions implement world-leading technologies for energy savings and environmental protection. We carried out comprehensive technical cooperation with JSW Steel in India and supported eco-related technical initiatives of the World Steel Association.

In engineering, we are working on solutions to energy problems in Japan following the earthquake disaster in 2011. In cooperation with a hot springs association in the Tsuchiyu Onsen area of Fukushima Prefecture, we started a feasibility study of binary geothermal power generation using geothermal energy. By incorporating renewable energies in urban redevelopment plans, we hope to support the recovery of disaster-struck areas, as well as revitalize regional areas throughout Japan. In June, we organized a special team to apply electrical-power technologies in solutions that address power shortages that Japan is now confronting.

In shipbuilding, our efforts are focused on developing eco-ships that raise fuel efficiency while reducing greenhouse gases (GHG). In August 2011, we launched our G Series of next-generation large-scale bulk carriers that produce 25% less GHG emissions of previous models. We will continue to pursue research and development, targeting a 50% reduction in GHG emissions by 2020, as well as developing G Series designs for tankers and other vessels.

**Q What are your plans for earthquake disaster reconstruction?**

**A** The JFE Group is continuing to make a full effort to assist the recovery of areas stricken by the Great East Japan Earthquake.

JFE Steel Group offers stricken areas priority access to materials required for infrastructure reconstruction. We also responded to electricity shortages by establishing a system that has tripled electricity output at the Chiba District facilities of our East Japan Works that are licensed to operate as independent power producers. We also developed technology that uses steel slag to fill up the hollowed-out areas between buildings and the ground caused by liquefaction and ground sinking.

Immediately after the disaster, the JFE Engineering Group dispatched a number of technicians to assist with the restoration of infrastructure, including gas and water pipelines. Also, JFE Engineering responded to urgent needs for waste disposal in afflicted areas. In Sendai, at the request of the city, we constructed and launched temporary incinerators in just three months. Meanwhile, we will continue responding to mounting needs for electrical power, led by the aforementioned project team.

**Q What initiatives are you taking to address social issues?**

**A** To put into practice the basic philosophy of the JFE Group, we have established corporate values and standards that spell out how we conduct our business, aiming to grow together with society.

We will work tirelessly to ensure compliance, address environmental issues and upgrade safety, disaster prevention, product quality and human rights, all based upon fair, objective and transparent corporate governance. At the same time, we will make sure that our policies and measures benefit all stakeholders.

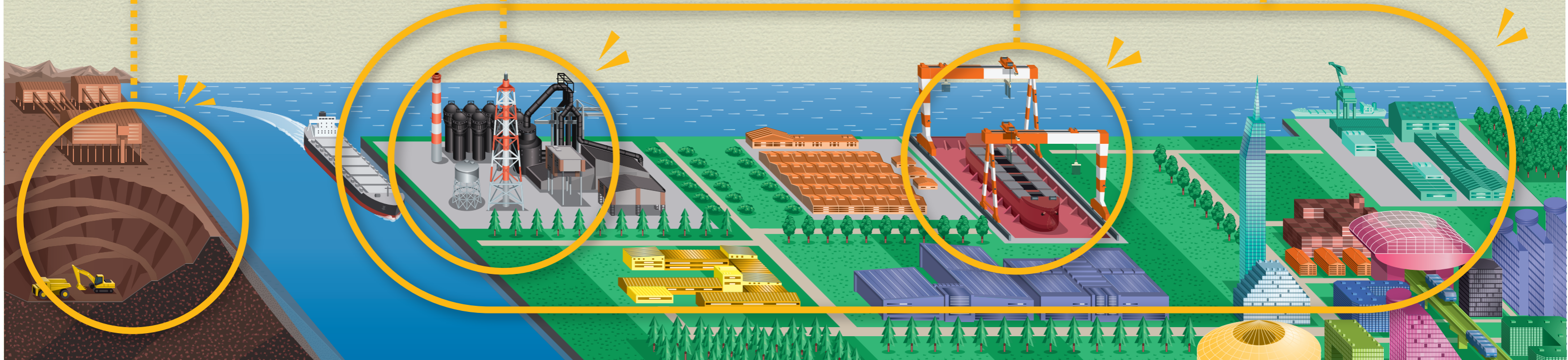
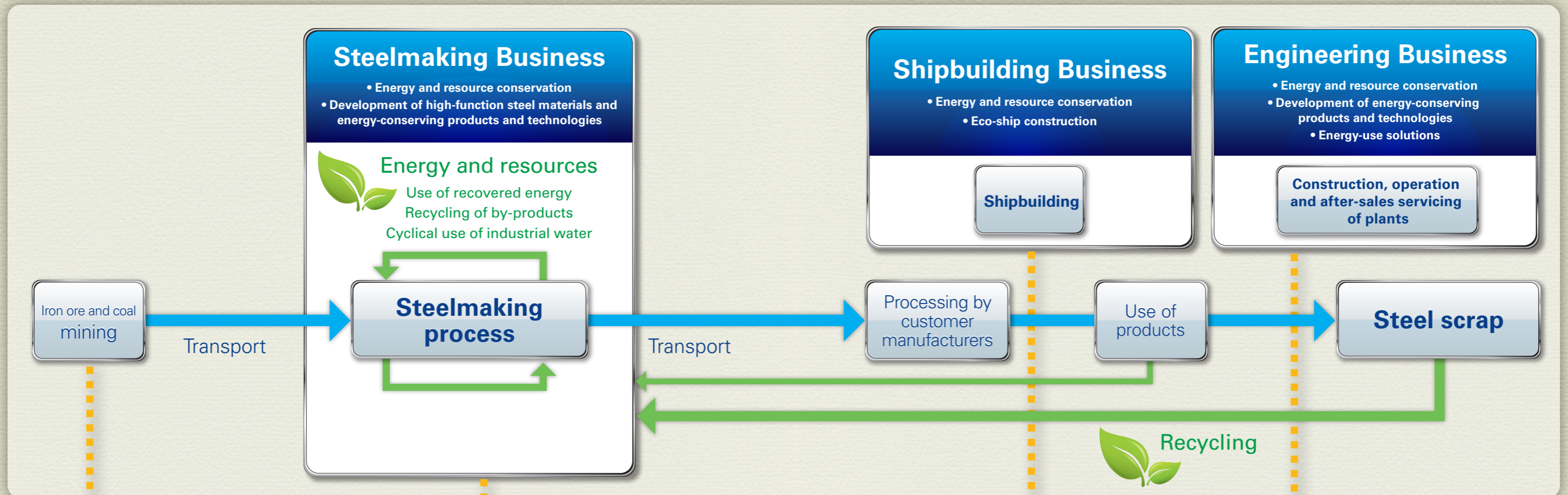
We will continue to contribute to the increasing sustainability of societies, making an all-out effort as reflected in our corporate values, Challenging Spirit, Flexibility and Sincerity, aiming to earn widespread trust in the JFE Group.

**Hajime Bada**  
President and CEO  
JFE Holdings, Inc.



# Supporting sustainability through three core businesses

The JFE Group, which is centered on the businesses of steelmaking, engineering and shipbuilding, is supporting the achievement of sustainable societies through its energy and resource-recycling technologies developed over many years.

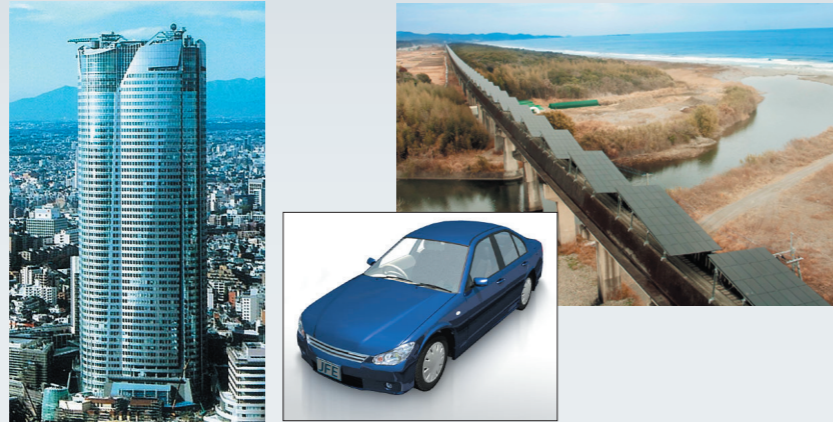


Businesses and Core Products

**Steel Business**

**“Only One” and “Number One” Products for the World**

JFE Steel, one of the world's leading integrated steel producers, is a strong international player with a sophisticated production system consisting of two major steelworks, one each in eastern and western Japan. JFE Steel engages in production and sales of branded “Only One” and “Number One” products, plus a wide range of other extra-value products incorporating the company's cutting-edge technologies and development know-how.



Steel products, titanium products, processed steel products, chemical products, steel slag products, formed material products, containers, mining and mineral products, functional materials, iron alloys, refractories, furnace construction work, civil engineering projects, equipment management and construction work, electrical construction, telecommunications construction work, thermal power generation, gas, temporary construction materials, real estate, insurance agency, steel structures, etc.

Expected Themes

- CO<sub>2</sub> emissions reduction
- Energy conservation
- Resource conservation
- Preservation of biodiversity
- Response to electric power shortages

Solutions

- Commercialization of eco-processes  
Reduction of CO<sub>2</sub> from production processes through the latest energy-conserving technologies and equipment
- Development of eco-products  
Energy conservation during the use of final products by supplying highly functional steel materials
- Worldwide deployment of eco-solutions  
Reduction of CO<sub>2</sub> on a global scale by deploying and transferring the world's highest-level technologies overseas
- Development and provision of technologies for marine environment restoration through the use of steel slag
- Supply of electric power to society through IPP and in-house power generation

**Engineering Business**

**Innovative Technologies for Energy and the Environment**

JFE Engineering technologies enhance the effective use of resources for clean energy. In addition to core businesses in urban environmental infrastructure and energy, JFE Engineering has developed specialized expertise in the fields of industrial machinery and steel structures, such as bridges.



**Energy field:**  
Power generation plants, energy plants, energy-efficient air conditioning, EV systems, pipelines and control systems

**Urban environment field:**  
Urban environment plants, aqua, biomass, operation and maintenance

**Steel structure field:**  
Bridges, coastal structures and rail welding

**Industrial machinery field:**  
Logistics, distribution systems, marine machinery and shield machines

- Reduction of CO<sub>2</sub> emissions
- Preservation of biodiversity
- Prevention of environmental pollution
- Assistance for earthquake reconstruction
- Contributions to urban development
- Assistance during electric power shortages

- Development of renewable energy technologies
- Construction of geothermal binary power generators
- Expanded sales of ballast-water management systems
- Development of sludge-drying system
- Construction of incinerators for earthquake waste

**Shipbuilding Business**

**Meeting Global Needs with Energy-saving Technologies**

With its “fleet” of five shipyards and one technical research center, Universal Shipbuilding has become a leader in the construction and repair of large merchant ships, including tankers and special vessels such as AHTSVs, minesweepers and icebreakers.



Large merchant ships (tankers, bulk carriers, ore carriers, LNG carrier vessels and LPG carrier vessels), large offshore structures, offshore vessels, AHTSVs, supply ships, transport ships, minesweepers, patrol vessels, icebreakers, other defense vessels, defense equipment, marine machinery, industrial robots, etc.

- Energy conservation

- Development of eco-ships
- Reduction of ship fuel costs
- Support systems for maritime navigation
- Energy-saving devices for ships

# Corporate Governance

## Basic Policy for Corporate Governance

The JFE Group comprises a holding company and the four operating companies of JFE Steel, JFE Engineering, Universal Shipbuilding, and Kawasaki Microelectronics.

JFE Holdings stands at the center of the Group's integrated governance system. The Company is the headquarters responsible for Group-wide strategy, risk management and accountability to the public.

Each operating company has its own operating system designed specifically for its particular industry, which allows each company to take the best course of action to achieve competitiveness and profitability.

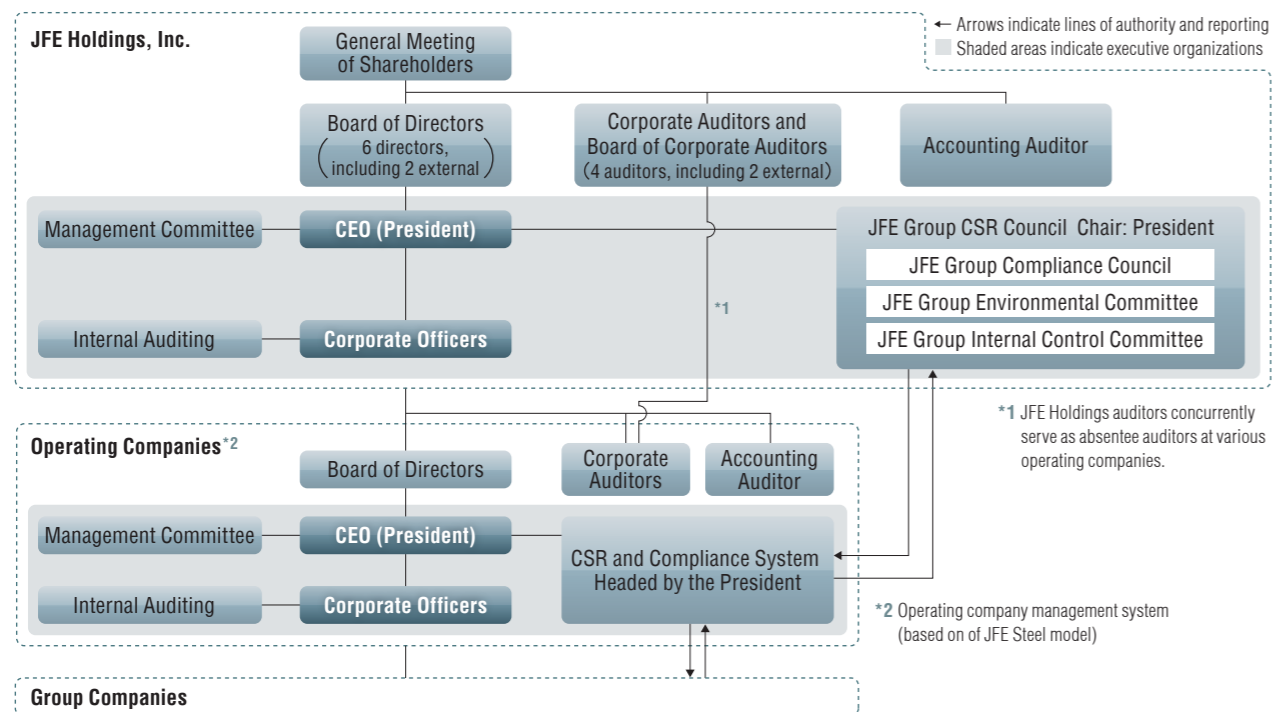
The holding company and operating companies, in the course of carrying out their respective duties, strive to maximize corporate value for shareholders and other stakeholders.

## Management

JFE Holdings added two external directors in June 2007, which has strengthened governance and enhanced the fairness, objectivity and transparency of its management structure. In addition, the term of a director was shortened from two years to one to better clarify managerial responsibility. The Company's board of directors, which comprises six directors, two of whom are external, is responsible for the supervision of operational performance and the maintenance and improvement of operational efficiency. The board of auditors, which includes two external auditors, monitors operations to ensure the soundness of the business.

JFE Holdings and each of its operating companies have adopted a corporate officer system under which decision-making and execution are separated to clarify authority and responsibility and to accelerate execution.

## Management Structure and Internal Controls



## JFE Holdings Outside Officers and Auditors (July 1, 2012)

Position at JFE Holdings	Name	Major Concurrent Position	Reasons for Selection
Member of the Board	Akimitsu Ashida	Representative and Chairman of the Board, Mitsui O.S.K. Lines Ltd.	Mr. Ashida has made outstanding achievements as president of Mitsui O.S.K. Lines and has abundant experience in global corporate management. He has become well versed in societal and economic matters through his wide-ranging activities, including serving as vice chairman of the Japan Association of Corporate Executives.
Member of the Board	Masafumi Maeda	Executive Vice President, University of Tokyo	Mr. Maeda has acquired great knowledge of metals through his many years of research into sustainable materials and material thermodynamics. He possesses considerable experience in running large organizations, including a major university as a director of the University of Tokyo.
Corporate Auditor	Hiroyuki Itami	Director of the School of Innovation Studies, Tokyo University of Science	Mr. Itami for many years has been actively involved in research into corporate governance, giving him broad knowledge of management techniques and strategies. He has acquired a deep understanding of industrial sectors through his research into technology management.
Corporate Auditor	Seiji Sugiyama	Honorary Advisor, Mizuho Financial Group	Mr. Sugiyama has been involved for many years in the management of financial institutions, affording him extensive knowledge of management and deep insight into financing and accounting. His broad, independent perspective is deemed to be well suited to contributing to the company as an auditor.

More information on current management:  
[www.jfe-holdings.co.jp/en/company/h-gaiyo](http://www.jfe-holdings.co.jp/en/company/h-gaiyo)

## Key Decision Making

Group companies make decisions about important matters, based on their own rules and according to clear procedures, while JFE Holdings makes decisions about Group-wide matters. Each operating company considers important matters related to the company and its affiliates by holding management meetings, etc., after which its board of directors renders decisions. JFE Holdings follows this procedure regarding matters important to the company, operating companies, and Group companies.

## Optimal Business Management Systems

The JFE Group allows each Group company to utilize the best management systems to optimize their respective products and operations, allowing them to coordinate strategic development and earnings for such products and operations.

JFE Steel	Product-sector system
JFE Engineering	Business-division system
Universal Shipbuilding	Business-division system

## Other

Technology development involving multiple Group members and IT initiatives are deliberated in Group-wide management organs.

JFE Group Technology Development Committee
JFE Group IT Committee

## Structure of Management Committee

Company Name	Chairman	Attendees
JFE Holdings	President	Corporate Officers, President of JFE Steel, President of JFE Engineering, Corporate Auditors
JFE Steel, JFE Engineering, Universal Shipbuilding	President	Members of the Board, main Corporate Officers, Corporate Auditors

## Internal Controls

The JFE Group's internal control system, which includes risk management, is governed by the Basic Policy for Building an Internal Control System. In accordance with this policy, rules have been established for organizational and operational matters, information storage and management, and countermeasures against antisocial forces, and rules for meetings of bodies such as the Board of Directors, Management Committee and JFE Group CSR Council. A Corporate Ethics Hotline has also been established. To further our corporate value, we regularly review the operation and maintenance of this internal control system to make improvements wherever necessary.

 **Basic Policy for Building an Internal Control System**  
[www.jfe-holdings.co.jp/en/company/h-gaiyo](http://www.jfe-holdings.co.jp/en/company/h-gaiyo)

### Strengthening Internal Controls

#### Internal Audits

JFE Holdings, its principal operating companies and key Group companies have all established internal audit organizations (total staff of 156 in principal operating companies as of April 1, 2012) to audit each company's operations. In addition, various internal audit organizations share information to enhance internal audits of the Group as a whole.

Internal audit managers from the principal operating companies also serve concurrently as internal audit managers of JFE Holdings, which strengthens ties within the Group.

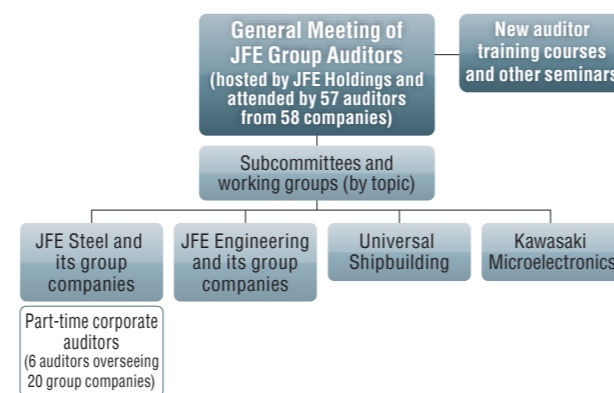
#### Audits by Corporate Auditors

JFE Holdings, operating companies and Group companies, in addition to undergoing statutory audits (by elected officials acting alongside the Board), also work to enhance audits by corporate auditors and strengthen ties among corporate auditors through the following activities.

- A total of 51 full-time auditors have been appointed for 38 companies, including JFE Holdings. The operating company staff are dispatched to Group companies as part-time external corporate auditors to perform the duties of corporate auditors. Each absentee auditor performs the functions of a corporate auditor for three or four subsidiaries (six absentee auditors serve a total of 20 companies) to enhance Group governance.

- The JFE Group Board of Auditors is composed of the full-time auditors of each Group company and absentee auditors. Subcommittees and working groups are created to address specific issues and meet autonomously throughout the year to share information, research issues and enhance their understanding (see diagram). The results of their activities are presented at the General Meeting of JFE Group Auditors and applied by individual corporate auditors in audit activities.

#### Structure of JFE Group Board of Auditors



#### Cooperation between Corporate Auditors and Accounting Auditors

The corporate auditors hold scheduled and unscheduled meetings (seven in FY2011) with the external accounting auditor (Ernst & Young ShinNihon) in which the latter presents its audit plan, updates on audit work and detailed information on audit results. During these meetings, the corporate auditors also receive detailed explanations regarding the accounting auditor's quality management system, explain their own audit plan and other matters to the accounting auditor, and share opinions on various matters with the accounting auditor.

#### Cooperation between Corporate Auditors and Internal Auditing Department

The corporate auditors hold scheduled and unscheduled meetings (four in FY2011) with the internal auditing department in which the latter presents its internal audit plan, updates on internal audit work and detailed information on internal audit results. During these meetings, the corporate auditors share opinions on various matters with the internal auditing department.

#### Operating Company Governance

To help strengthen governance in the operating com-

panies, members of JFE Holdings management attend each operating company's General Meeting of Shareholders and Management Planning Briefing, receive reports on each operating company's business activities, discuss subsidiary management policies, and engage in other forms of shareholder oversight as representatives of the holding company.

## CSR System

The JFE Group is acutely aware of its responsibilities as a member of society. Meeting corporate social responsibilities (CSR) to help create a better society are

central to how we manage our business and continue to be strengthened. In October 2005, we established the JFE Group CSR Council (chaired by the president and convened quarterly) at JFE Holdings. This council supervises and guides the JFE Group's CSR activities in addressing issues including compliance, the environment, personnel/labor, safety, disaster prevention, social contributions and responses to antisocial forces. We also have established the JFE Group Compliance Committee, JFE Group Environmental Committee, JFE Group Internal Control Committee and other Group-level organizations to deliberate matters in assigned areas and report findings and results to the JFE Group CSR Council.

#### CSR Structure



## Major CSR Activities for FY2011

JFE Steel, which views CSR as boosting corporate value by increasing stakeholder satisfaction, places top priority on environmental protection, safety, disaster prevention, compliance and other matters that fundamentally impact its continued existence. Accordingly, it assigns great importance to the PDCA (Plan-Do-Check-Action) cycle and strengthening CSR awareness.

The CSR Council, which is chaired by the president, discusses CSR matters and policies, as well as monitors the implementation of CSR measures. During FY2011, CSR Council meetings were held on eight occasions to facilitate discussion of CSR matters by 10 committees.

The Customer Satisfaction Committee, which strives to deepen product knowledge among sales personnel, strengthened training programs for administrative employees concerning basic steel technology. Also, to strengthen services for global customers, the committee encouraged overseas personnel to participate in annual seminars on dealing with customers. At the suggestion of the Social Contributions Committee, the company expanded its hosting of activities targeting local communities, such as plant tours, JFE festivals and sporting events. New initiatives for children included educational programs at elementary schools and the ECO Kids' Tour program for elementary and middle school students at the ECO Products exhibition.

### JFE Engineering

JFE Engineering, in pursuing business based on management policies rooted in CSR, has designated compliance, safety, disaster prevention and environmental protection as four basic areas of its social responsibility. The company also promotes employee awareness of compliance through direct training and handouts, along with continuous inspection of work processes to confirm compliance with all laws and regulations.

### Universal Shipbuilding

Universal Shipbuilding carries out its business in accordance with the JFE Group Standards of Business Conduct, paying special attention to compliance, the environment and internal controls.

FY2011 saw Universal Shipbuilding implement compliance through regular, proactive dispersion of compliance information via an internal message board, company newsletters and other means.

In FY2012, Universal Shipbuilding will continue to strengthen compliance activities at subsidiaries, alongside ongoing efforts aimed at better CSR awareness overall.

### JFE Steel Group Companies

JFE Steel Group companies' diverse initiatives include measures for improved safety and health, environmental awareness, compliance, business continuity planning, quality assurance, antitrust laws and intellectual property. The initiatives are carried out in accordance with JFE Steel's CSR program.

Group companies share and act on information through conferences (46 times in FY2011) with the aim of continually strengthening CSR activities. JFE Steel also provides monitoring and guidance for each activity.

## CSR Audit

To ensure that activities with CSR significance are conducted properly, the operational audits of the JFE Group's internal auditing department examine and verify issues such as environmental management, compliance with Antimonopoly Law, expense management, overseas office management, tax law compliance and safety management.

If an audit reveals a problem, JFE Holdings' internal audit department and the operating companies then work together to share information within the Group to determine suitable corrective measures for implementation in Group activities.

# Environmental Sustainability Report

The JFE Group and its operating companies, in accordance with JFE's environmental philosophy and policy, continue to implement measures to curb global warming, protect the environment, promote recycling and develop technologies that help to reduce environmental loads. Initiatives carried out by the JFE Group and its operating companies in FY2011 are presented in this Environmental Sustainability Report.



Windbreak fence at a coal yard (Kurashiki District) JFE Steel P. 21  
 Fuel-leak prevention drill Universal Shipbuilding Corporation P. 26  
 Auto-parking structure using CYCLE TREE system JFE Engineering P. 30  
 Eco-Products 2011 JFE Group P. 34

## Environmental Philosophy

Protecting and enhancing the global environment is a top priority of the JFE Group. The Group works to keep its business in harmony with the environment, ultimately for greater social prosperity.

## Environmental Policy

1. To reduce the environmental impact of all business operations
2. To make contributions through technologies and products
3. To make contributions through conservation of resources and energy
4. To promote communication with society
5. To promote international cooperation




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# Priority Environmental Targets and Results

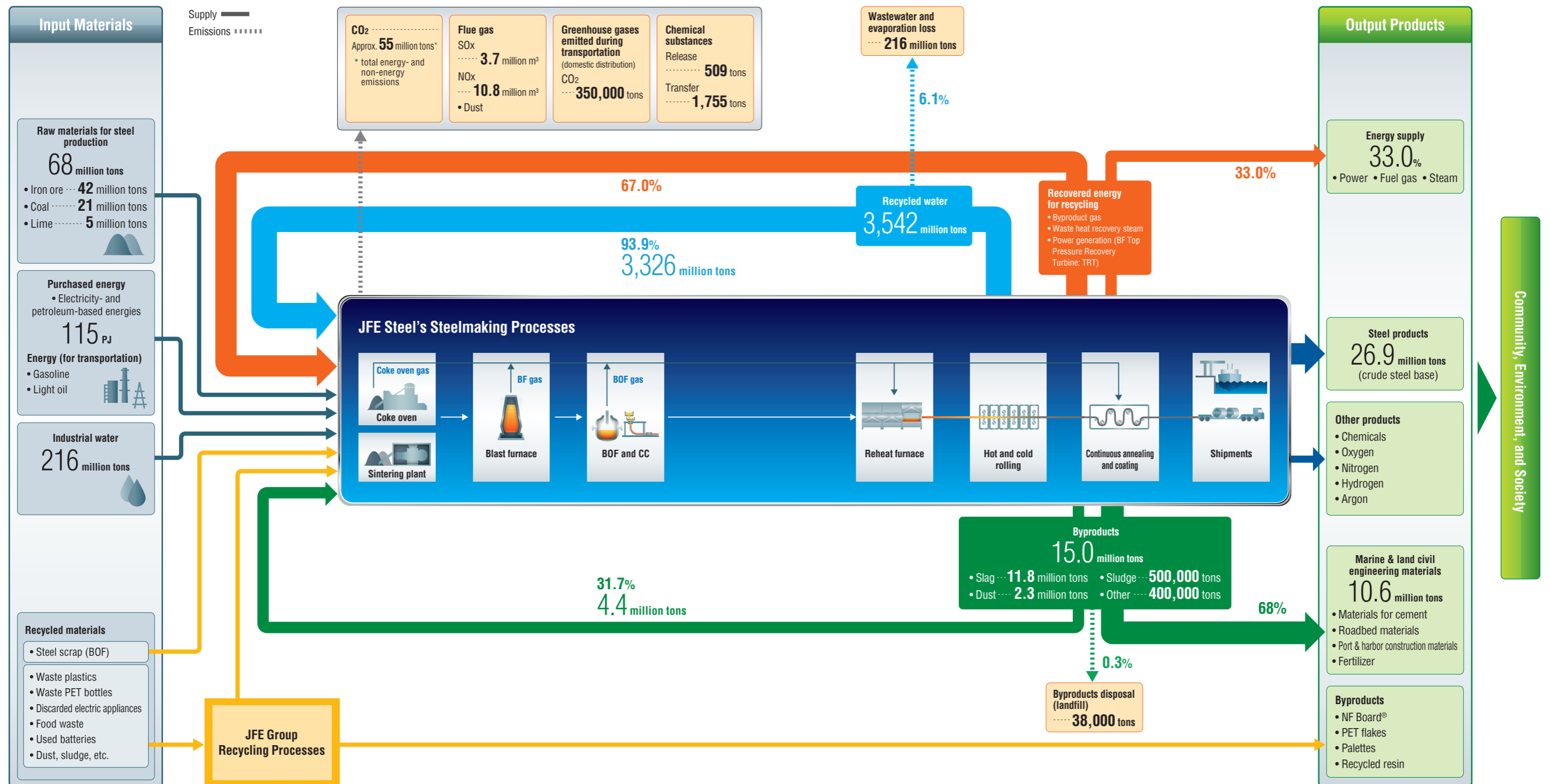
Evaluation: A+: Target exceeded A: Target achieved B: Target not achieved

Group Companies	Categories	FY2011 Priority Environmental Targets	FY2011 Results	Evaluation	FY2012 Priority Environmental Targets	Pages
<b>JFE Steel</b> 	<b>Global warming prevention</b>	<ul style="list-style-type: none"> <li>Global warming prevention under Voluntary Action Program of Japan Iron and Steel Federation</li> </ul> <p>(Targets based on JISF Voluntary Action Plans Reduce energy consumption by average 10% per annum in FY2008 – FY2012 period compared to FY1990 Reduce CO<sub>2</sub> emissions by average 9% per annum in FY2008 – FY2012 period compared to FY1990)</p>	<p>Energy-saving achievements:</p> <ul style="list-style-type: none"> <li>Completed two Kurashiki Super-SINTER® machines (No. 2 unit in September and No. 3 unit in April).</li> <li>Fukuyama No. 3 blast furnace upgrades completed in May</li> <li>Chiba Super-SINTER® completed in May</li> <li>Implemented flood-prevention measures to protect raw materials at pig-iron facilities in Keihin area</li> </ul> <p>(Status of JISF Voluntary Action Plans (vs. FY1990) Reduced energy consumption by approx. 12% and CO<sub>2</sub> emissions by approx. 12% in FY2008 – FY2010 period)</p>	A+	<ul style="list-style-type: none"> <li>Implement global warming countermeasures in accordance with JISF's Voluntary Action Plans</li> </ul>	19–20 27–29
	<b>Environmental risk reduction</b>	<ul style="list-style-type: none"> <li>Enhance Group-wide compliance system</li> </ul>	<ul style="list-style-type: none"> <li>Implemented Environmental Manager Training seven times for 120 recipients at Group companies</li> </ul>	A+	<ul style="list-style-type: none"> <li>Enhance Group-wide compliance system</li> </ul>	21–22
		<ul style="list-style-type: none"> <li>Voluntary environmental-preservation activities</li> </ul>	<ul style="list-style-type: none"> <li>Implemented Environmental Management Action Plans and Performance Checklists on a unified basis to companies Group-wide</li> </ul>	A+	<ul style="list-style-type: none"> <li>Voluntary eco-preservation activities Conduct three training sessions for new environmental managers Carry out checking and tracking activities for environmental auditing</li> <li>Achieve dioxin emissions averaging less than 5.5g-TEQ per annum in FY2012 – FY2016 period in accordance with new national reduction plan</li> </ul>	
	<b>Byproduct recycling</b>	<ul style="list-style-type: none"> <li>Deploy recycling equipment for dust and sludge</li> </ul>	<ul style="list-style-type: none"> <li>Reused waste acid and reduced related sludge discharges using new recycling technology</li> </ul>	A+	<ul style="list-style-type: none"> <li>Reduce dust and sludge and furthered recycling efforts</li> </ul>	22 28
<b>Waste control</b>	<ul style="list-style-type: none"> <li>Deploy electronic manifest system among major Group companies</li> </ul>	<ul style="list-style-type: none"> <li>Introduced electronic manuals in 34 major workplaces</li> </ul>	A	<ul style="list-style-type: none"> <li>Complete waste-related education for all Group companies</li> </ul>	17–18 21–22	
	<ul style="list-style-type: none"> <li>Implement e-learning on waste disposal among Group companies</li> </ul>	<ul style="list-style-type: none"> <li>Conducted waste-related education in 110 workplaces</li> </ul>	B			
<b>JFE Engineering</b> 	<b>Global warming prevention</b>	<ul style="list-style-type: none"> <li>Based on the voluntary action plan on environment defined by the Japan Society of Industrial Machinery Manufacturers, implement global warming countermeasures to reduce CO<sub>2</sub> emissions released during production processes at Tsurumi, Tsu and Shimizu works by an average of 12.2% per annum in the FY2008 – FY2012 period compared to FY1997.</li> </ul>	<ul style="list-style-type: none"> <li>21.8% reduction compared to FY1997</li> </ul>	A+	<ul style="list-style-type: none"> <li>Based on the voluntary action plan on environment defined by the Japan Society of Industrial Machinery Manufacturers, implement global warming countermeasures to reduce CO<sub>2</sub> emissions released during production processes at Tsurumi, Tsu and Shimizu works by an average of 12.2% per annum in the FY2008 – FY2012 period compared to FY1997</li> </ul>	23–24
	<b>Construction site waste reduction</b>	<ul style="list-style-type: none"> <li>Recycle at least 99.5% of rubble</li> <li>Recycle at least 95.0% of mud</li> <li>Recycle at least 85.0% of industrial waste (excluding rubble and mud)</li> </ul>	<ul style="list-style-type: none"> <li>Recycled at least 99.6% of rubble</li> <li>Recycled at least 95.6% of mud</li> <li>Recycled at least 82.9% of industrial waste (excluding rubble and mud)</li> </ul>	A	<ul style="list-style-type: none"> <li>Recycle at least 99.5% of rubble</li> <li>Recycle at least 95.0% of mud</li> <li>Recycle at least 85.0% of industrial waste (excluding rubble and mud)</li> </ul>	23
<b>Universal Shipbuilding</b> 	<b>Global warming prevention</b>	<ul style="list-style-type: none"> <li>Reduce per-unit (processed steel weight) electric power consumption at new shipyards by 10% compared to FY1990</li> </ul>	<ul style="list-style-type: none"> <li>Reduced by 22% compared to FY1990</li> </ul>	A+	<ul style="list-style-type: none"> <li>Reduce per-unit (processed steel weight) electric power consumption at building yards by 10% compared to FY1990</li> <li>Reduce per-unit (operating time) energy consumption Group-wide by 1% compared to previous fiscal year</li> </ul>	25–26
		<ul style="list-style-type: none"> <li>Reduce per-unit (operating time) energy consumption Group-wide by 1% compared to previous fiscal year</li> </ul>	<ul style="list-style-type: none"> <li>Increased per-unit energy consumption by 3.0% compared to previous fiscal year</li> </ul>	B		
	<b>Waste emissions reduction</b>	<ul style="list-style-type: none"> <li>Recycle approx. 86% of waste from production</li> </ul>	<ul style="list-style-type: none"> <li>Recycled 87.3% of waste</li> </ul>	A+	<ul style="list-style-type: none"> <li>Recycle approx. 86% of waste from production</li> </ul>	26
	<b>VOC emissions reduction</b>	<ul style="list-style-type: none"> <li>Comply with regulation requiring 700 ppmC or less in coating facilities with air-exhaust capacity of at least 100,000 m<sup>3</sup>/hour, which includes the Tsu and Ariake shipyards.</li> </ul>	<ul style="list-style-type: none"> <li>Reduced emissions to less than 700 ppmC at Ariake and Tsu shipyards</li> </ul>	A	<ul style="list-style-type: none"> <li>Comply with regulation requiring 700 ppmC or less in coating facilities with air-exhaust capacity of at least 100,000 m<sup>3</sup>/hour, which includes the Tsu and Ariake shipyards</li> </ul>	26
<b>PRTR substances monitoring</b>	<ul style="list-style-type: none"> <li>Monitor and control release and transfer of restricted chemicals, particularly xylene, ethylbenzene and toluene, at five shipyards.</li> </ul>	<ul style="list-style-type: none"> <li>Maintained emissions and transfer amounts of three major chemicals at levels roughly equal to previous fiscal year</li> </ul>	A	<ul style="list-style-type: none"> <li>Monitor and control release and transfer of restricted chemicals, particularly xylene, ethylbenzene and toluene, at five shipyards</li> </ul>	25	

# Reducing Environmental Loads at JFE Steel

## Energy and Materials Flow in Steelmaking

JFE Steel has been striving to reduce the levels of energy and materials used in steelmaking processes, resulting in the company's extensive recycling of energy, water and materials. Also, plastics and other waste materials are recycled in greater volumes than the resulting final waste.



## Reducing Environmental Loads at JFE Steel

### Energy-saving and CO<sub>2</sub>-reduction Initiatives in Steelmaking

JFE Steel continues to implement initiatives to save energy and reduce CO<sub>2</sub> emissions in its steelmaking processes, aiming to achieve the voluntary action plan targets set forth by the Japan Iron and Steel Federation.

#### Initiatives to Save Energy and Reduce CO<sub>2</sub>

JFE Steel has been actively pursuing energy-saving initiatives centering on the deployment of related equipment, etc. since before the Japan Iron and Steel Federation introduced its voluntary action plan.

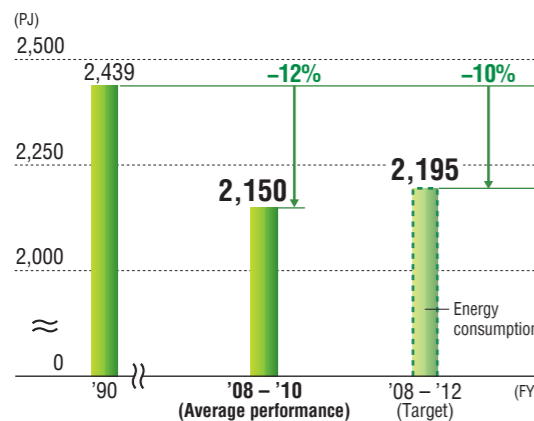
#### Unit Energy Consumption at JFE Steel



#### Steel Industry Initiatives (Voluntary Action Plan)

To encourage energy conservation in steelmaking, the Japan Iron and Steel Federation, to which JFE Steel belongs, is targeting a reduction of energy consumption in the FY2008 – FY2012 period by an average of 10% per annum (CO<sub>2</sub> equivalent: 9%) below the FY2009 level.

#### Energy Consumption



#### Energy-savings and CO<sub>2</sub> Emissions in FY2011

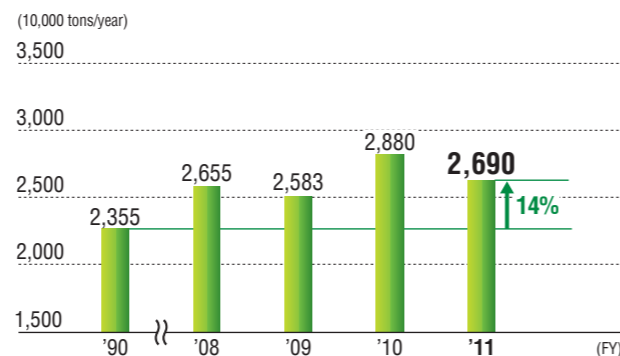
Energy consumption and CO<sub>2</sub> emissions in steelmaking is greatly related to production volume. To accurately assess the effects of improvements due to operational technologies and capital investments, JFE Steel places importance on the reduction of basic units (energy consumption and CO<sub>2</sub> emissions per unit of production).

JFE Steel's FY2011 crude steel production was 26.9 million tons, a 7% reduction from FY2010 but a considerable increase of 14% from FY1990. As the result of ongoing energy conservation and other initiatives, however, FY2011 energy consumption and CO<sub>2</sub> emissions both declined by 3% compared to FY2010, despite the negative impact of the Great East Japan Earthquake. Compared to FY1990, energy consumption was cut by 6% and CO<sub>2</sub> emissions by 8%.

Looking at the basic units emphasized by JFE Steel, average unit energy consumption per annum declined by 19% and average unit CO<sub>2</sub> emissions per annum declined by 21% in the FY2008 – FY2011 period compared to FY1990.

Average energy consumption per annum declined by 7% and CO<sub>2</sub> emissions declined by 9% over the same period.

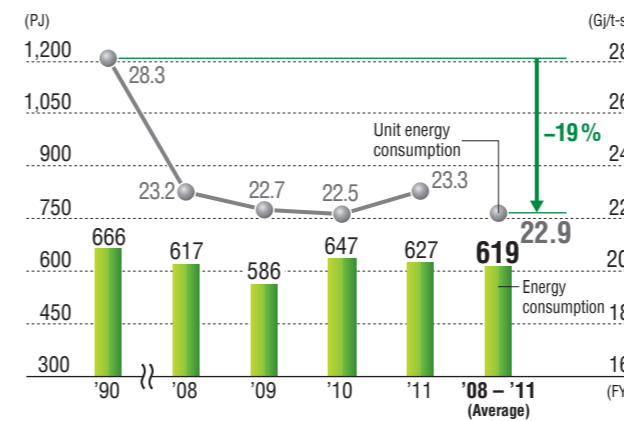
#### Production of Crude Steel



\* The CO<sub>2</sub> coefficient for purchased electricity uses the value from FY2010 (0.316kg-CO<sub>2</sub>/kwh).

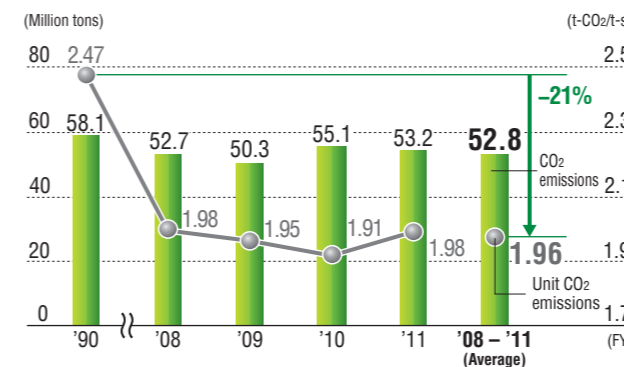
Unit energy consumption (FY2008 – FY2011 average) **Reduced by 19%**

#### Energy Consumption and Unit Energy Consumption



Unit CO<sub>2</sub> emissions (FY2008 – FY2011 average) **Reduced by 21%**

#### CO<sub>2</sub> Emissions and Unit CO<sub>2</sub> Emissions



\* The CO<sub>2</sub> coefficient for purchased electricity uses the value from FY2010 (0.316kg-CO<sub>2</sub>/kwh).

#### Greener Operations vs. FY1990

	'08	'09	'10	'11	'08-'11 Average
Crude Steel	13	10	22	14	15
Energy	-7	-12	-3	-6	-7
Unit Consumption	-18	-20	-21	-18	-19
CO <sub>2</sub>	-9	-13	-5	-6	-9
Unit Consumption	-20	-21	-22	-20	-21

### Comprehensive Measures to Reduce CO<sub>2</sub>

In addition to conserving energy and reducing CO<sub>2</sub> emissions in steelmaking, JFE Steel is working to comprehensively reduce CO<sub>2</sub> emissions by reducing the environmental load of distribution, providing highly functional steel materials that help save energy in final products and cooperating worldwide on energy conservation and environmental technologies.

► For examples, see "Reducing Environmental Loads through Products and Technologies" (P19) and the highlight version of "Special Feature 1: Steelmaking and Prevention of Global Warming" (P7-10).

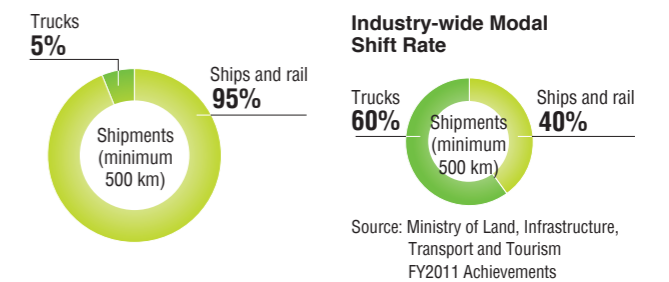
#### Energy Saving in Transportation

Modal shift rate FY2011 **95%**

To reduce the environmental load of transporting steel, JFE Steel is actively promoting shifting transport modes to ships and rail.

The modal shift\* rate for FY2011 was 95%.

\* Volume shipped (minimum 500 km) by rail or ship



Source: Ministry of Land, Infrastructure, Transport and Tourism FY2011 Achievements

#### Non-energy CO<sub>2</sub> Emissions

Non-energy CO<sub>2</sub> emissions **1.7 million tons**

Lime and dolomite, which are used as auxiliary materials in blast furnaces and converters, emit CO<sub>2</sub> when broken down. Such non-energy CO<sub>2</sub> emissions in FY2011 totaled 1.7 million tons, or roughly the same level as in FY2010.

## Environmentally Friendly Initiatives

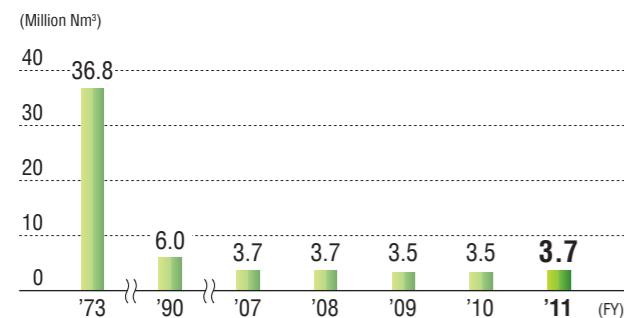
### Air Quality



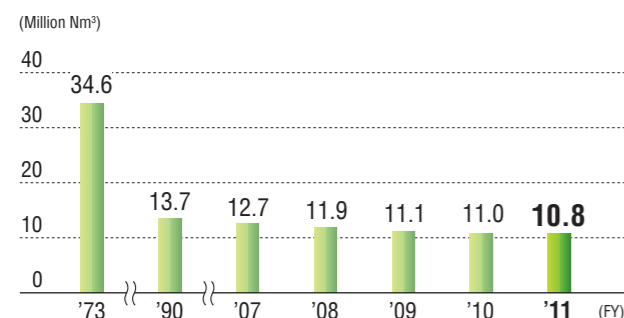
#### ● Reducing Sulfur Oxide and Nitrogen Oxide Emissions

JFE Steel is working to reduce emissions by installing low-NOx burners in reheat furnaces, switching to low-sulfur fuels and deploying desulfurization and denitration devices in sintering plants, which are major sources of SOx and NOx emissions.

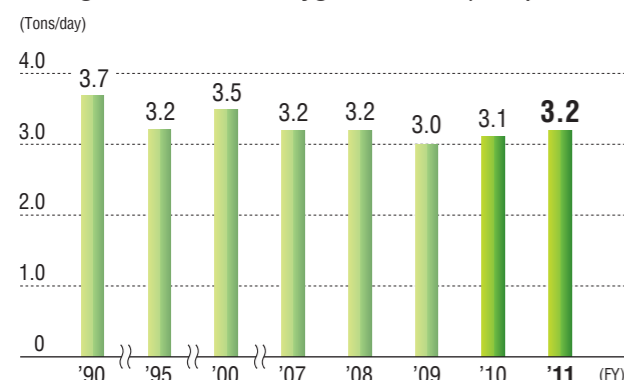
#### SOx Emissions



#### NOx Emissions



#### Changes in Chemical Oxygen Demand (COD)



#### ● Suppressing Dust Dispersion

JFE Steel is working to suppress dust dispersion through measures including enhancement of on-premise cleaning and installation of sprinklers, windbreak fences, new dust collectors and other dust collection methods in raw material yards.



Windbreak fence at coal yard in Kurashiki District

### Reducing Environmental Load on Water Resources



JFE Steel reduces environmental load on water resources by recycling large volumes of water used in steelmaking and thoroughly purifying water released into public waterways.



In FY2011 industrial water recycling by the company stood at the high rate of 93.9%. Chemical oxygen demand (COD), the water-quality index for waste water, was 3.2 tons per day, the same level as in the previous year.

### Management of Chemical Substances



JFE Steel voluntarily reduces its discharge of chemical substances to lower the environmental load on air and public water resources. Release into the atmosphere and public waterways in FY2011 came to 509 tons.

### Management of PCB Waste



The storage, management, transportation and processing of JFE Steel's polychlorinated biphenyl (PCB) equipment complies fully with Japan's PCB Special Measures Law.

JFE Steel completed the early registration of its large-sized PCB equipment with the Japan Environmental Safety Corporation (JESCO) in 2005, and since then has carried out handling in accordance with instructions from JESCO.



PCB storage equipment in West Japan Works (Fukuyama District)

### Prevention of Environmental Abnormalities



JFE Steel prevents environmental abnormalities by monitoring a variety of conditions using a range of methods, such as continuous analyses with automated equipment, periodic batch analyses, remote monitoring by industrial-use television, and other means of monitoring atmospheric and water quality. The resulting information is made widely available.



Remote surveillance of environmental data (Keihin Area)

### Reducing and Reusing Byproducts



JFE Steel controls the occurrence and emission of iron-steel slag (steelmaking byproduct), iron dust from blast furnaces and converters, sludge from water treatment facilities and other byproducts. Dust and sludge with high iron content are recycled as raw materials for steelmaking, helping to reduce the final amount that must be disposed.

In FY2011, JFE Steel effectively used waste acid and reduced sludge through the development and introduction of waste-acid recycling technology. The FY2011 rate for recycling slag, dust and sludge was 99.7%

#### ● Iron-steel Slag for Industrial Uses

JFE Steel reuses all of its iron-steel slag for industrial purposes, predominantly construction and the production of cement. More recently, the company has been using iron-steel for environmental conservation, such as the production of materials used to restore marine areas.



Marine Rocks® at Ithama fishing port in Minami Izu

# Reducing Environmental Loads at JFE Engineering

## Our Relationship with the Environment

### Recycling

See Data Compilation for details.

Industrial Waste Recycling at Construction Sites **97.8%**

JFE Engineering's construction and production divisions are constantly looking for ways to further reduce and recycle industrial wastes by strengthening waste separation and improving recycling methods. Company offices continue to pursue enhanced recycling through methods such as upgrading waste-separation rules and carrying out recycling patrols staffed by representatives from each department, which were performed four times in FY2011.

Recycling targets for construction, production and office units are reviewed in annual year-end evaluations.

JFE Engineering's planning and design divisions also lower their environmental loads by setting targets for the expanded use of recycled materials and energy-efficient equipment.



Recycling Patrol at Tsurumi Works

### CO<sub>2</sub> Reduction Initiatives

In 1997, the Japan Society of Industrial Machinery Manufacturers, of which JFE Engineering is a member, introduced a voluntary action plan on the environment to cut CO<sub>2</sub> emissions by 12.2% relative to FY1997 levels by

the end of FY2010 (to be achieved as an annual average in FY2008 – FY2012).

To achieve these goals, JFE Engineering has been reducing its use of electricity and gas in operations for cutting and welding, and making more efficient use of compressed air at plants. It also has been trying to lower energy use in offices by switching to LED illumination and using heat-storage air conditioning systems that incorporate clathrate hydrate slurry (CHS).

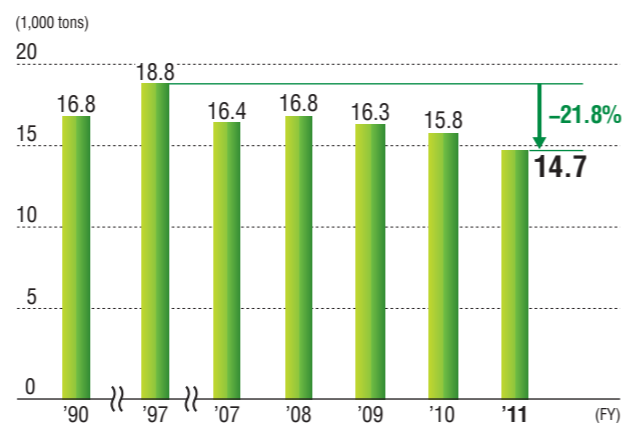
In FY2011, total office and plant CO<sub>2</sub> emissions came to 14,700 tons, down 7% year on year and 21.8% below the FY1997 level. Average CO<sub>2</sub> emissions in the FY2008 – FY2011 period totaled 15,900 tons.

JFE Engineering has been assessing CO<sub>2</sub> emissions at construction sites since August 2004 and implementing CO<sub>2</sub>-reduction activities, such as stopping idle motors, since FY2006.



Clathrate hydrate slurry (CHS) heat-storage air conditioning system installed at Tsurumi Works

### CO<sub>2</sub> Emissions



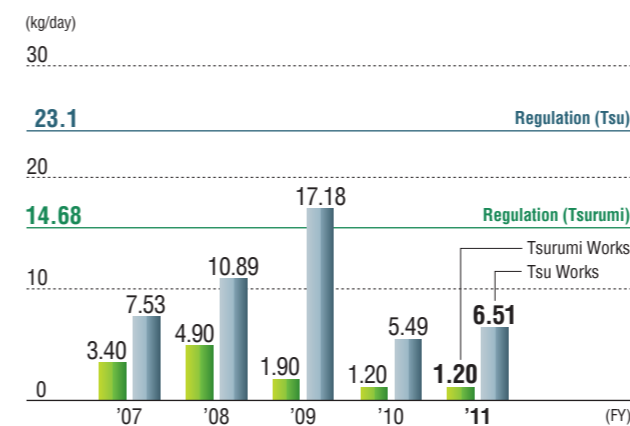
## Environmental Preservation

See Data Compilation for details.

### Water Quality

To comply with regulations controlling the discharge of water pollutants, each plant sets voluntary standards and regularly measures and manages water quality.

### Chemical Oxygen Demand



### Air Quality

The Tsurumi and Tsu works, which have soot- and smoke-emitting facilities that are regulated by the Air Pollution Control Law, comply with this law and local regulations by setting voluntary emission standards and regularly measuring and managing nitrogen oxide emissions, etc.

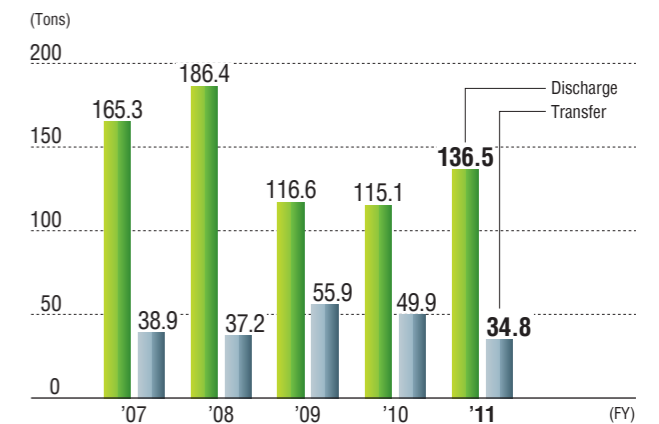
The company does not own any facility that discharges general particulates subject to the Air Pollution Control Law, such as benzene, trichloroethylene or tetrachloroethylene.

### Chemical Substances

In compliance with the Pollutant Release and Transfer Register (PRTR) Law, JFE Engineering controls its release and transfer of designated chemical substances and reports the figures to the national government through local bodies.

The company not only complies with all laws and regulations, it continues to take steps toward further reduction of PRTR-restricted chemical discharges.

### Discharge and Transfer of Substances Reported under PRTR



### PCB Waste Management

For the management and storage of polychlorinated biphenyl (PCB) waste at each plant, status reports are submitted annually to local authorities in accordance with the PCB Special Measures Law.

Treatment of PCB waste is carried out in accordance with the schedule laid down by Japan Environment Safety Corporation (JESCO).

# Reducing Environmental Loads at Universal Shipbuilding

## Our Relationship with the Environment

### Initiatives to Reduce CO<sub>2</sub>

#### ● Reviewing Production and Office Divisions

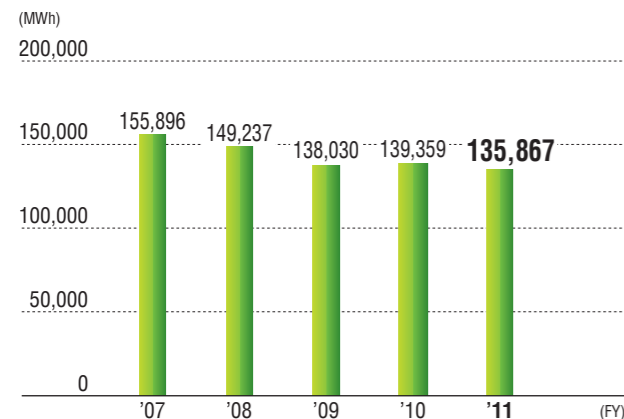
Electricity consumption per processed steel weight Compared to FY1990 **22% reduction**

Electrical power energy accounts for the overwhelmingly largest percentage of CO<sub>2</sub> emitted by Universal Shipbuilding. For that reason, the company positions its reduction of electricity consumption as a top priority.

Production divisions are using energy-conserving lighting fixtures, installing daylighting in factory roofs and upgrading to more efficient equipment. Office divisions are revising illumination levels, adjusting heating and cooling temperatures and halting air conditioning during energy-conservation periods.

Total electricity usage in FY2011 was 135,867MWh, a reduction of 3,492MWh from the previous fiscal year. Although energy consumption per work hour did not achieve the targeted 1% reduction, consumption per processed steel weight was slashed 22% below the FY1990 level, which was well beyond the target of 10%. Going forward, we will continue to strengthen its energy-conservation efforts by further reducing its electricity consumption through upgraded equipment and better visualization of its electricity consumption.

#### Power Consumption



## Environmental Preservation

#### ● Air Quality

To comply with the national Air Pollution Control Law and local regulations, each office and plant sets voluntary standards for designated facilities and then regularly measures emissions of particulate matter, sulfur oxide and nitrogen oxide. All emissions were below targeted levels in FY2011. The company will continue to carry out measuring and monitoring activities to ensure ongoing achievement of its voluntary targets going forward.

#### ● Water Quality

To comply with regulations controlling the discharge of water pollutants, each plant has set voluntary standards and regularly measures water quality.

Measurements taken in FY2011 showed that discharged pollutants were below regulated levels. Measurement and monitoring activities will continue to be carried out to ensure consistent performance.

#### ● Chemical Substances

In accordance with the Pollutant Release and Transfer Register (PRTR) Law, Universal Shipbuilding monitors and controls its release and transfer of designated chemical substances, reporting these figures to the national government through local bodies.

In FY2011, discharge was reduced for ethylbenzene, xylene and toluene, three chemicals used in painting. This was accomplished by strengthening the management of paint leaving warehouses and by improving procedures and technical abilities to reduce the amounts of paint used in operations.

#### ● PCB Waste Management

Status reports are submitted annually to local authorities in regard to each plant's management and storage of polychlorinated biphenyl (PCB) waste. PCB detoxifying treatment is carried out by the Japan Environment Safety Corporation (JESCO).

In FY2011, detailed review of PCB waste data confirmed that high-concentration PCBs had been reduced by about 21.9 tons and trace PCBs by about 20.5 tons.



Storage of PCB transformers at Maizuru Shipyard

#### ● Volatile Organic Compounds

Measurements are carried out twice annually to ensure that the Ariake and Tsu works, both of which have volatile organic compound (VOC) coating facilities, are in compliance with VOC regulations under the revised Air Pollution Control Law. Results in FY2011 confirmed that levels were at 56–690 ppmC, or below the regulated limit of 700 ppmC.

Other VOC-reduction efforts included improvements in coating processes and reductions in the amount of paint used by controlling paint thicknesses. Low-VOC paints were adopted for some inboard sections.

#### ● Zero Oil-leaks Campaign

Universal Shipbuilding conducts regular training at shipyard to prevent accidents leading to oil leaks, a potentially significant source of marine pollution. Training covers how to deal with oil spills, including communications, chains of command and guidelines for treating spillage. The training also aims to identify and revise any possible shortfall in countermeasures and related response systems.

In FY2011, five training sessions involving 144 participants were conducted, and the company is pleased to report that no accident leading to oil spillage occurred during the year. Training will continue to be carried out and reviewed to ensure maximized accident prevention and heightened awareness of the possibility of accidents.



Oil-leak prevention training

## Recycling

#### ● Reducing Waste Generation and Discharge

Industrial waste recycling rate **87.3%**

Universal Shipbuilding's production divisions work to reduce waste discharge by ensuring that garbage is properly reused or recycled, including on-site patrols and enhanced management of garbage receptacles for separated waste. Office divisions reuse wastepaper and thoroughly separate garbage in a bid to lower waste disposal and recycle more.

Total waste discharge by production and office divisions in FY2011 came to 51,922 tons, down 2,326 tons from the previous fiscal year. The recycling rate rose to 87.3% from 85.5%.



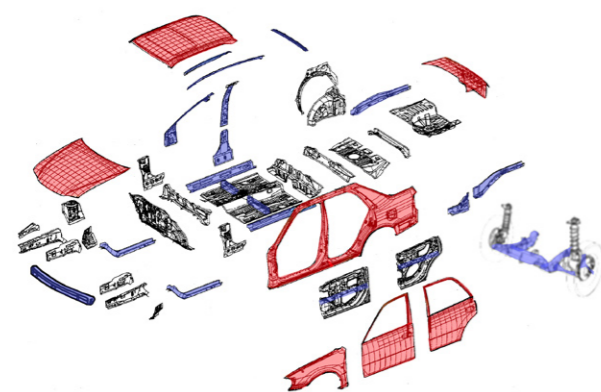
Accumulated cans at Tsu Shipyard

# Reducing Environmental Loads through Products and Technologies

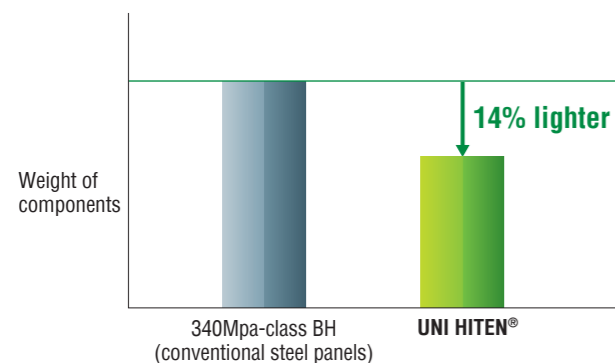
## UNI HITEN®: CO<sub>2</sub> Reduction through Lighter Vehicles

UNI HITEN® steel plates are made of 440MPa-class high-strength GA (galvannealed) steel developed for use in automobile exterior panels. By raising the temperature of the processes for press forming and paint baking, the strength of UNI HITEN® is increased by more than 50MPa above the strength of conventional 340MPa-class BH (bake-hardening) steel plates. Not only does this considerably improve dent resistance of vehicles, it enables the development of lighter vehicles made with thinner exterior plates and less components for reinforcement. UNI HITEN® is now used commercially in automobile exterior panels, making a significant contribution to CO<sub>2</sub> reduction.

### UNI HITEN® in Automobiles



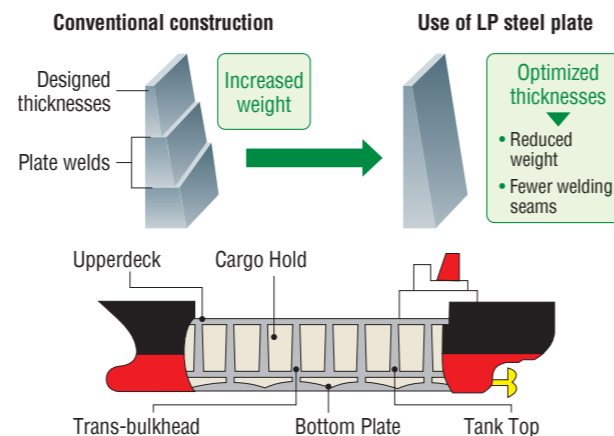
### Weight reduction with UNI HITEN®



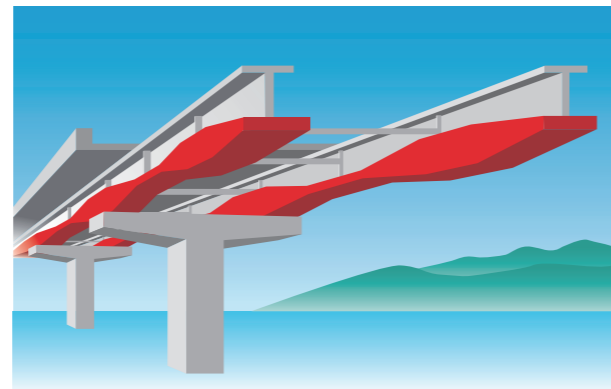
## Longitudinally Profiled Steel Plates: CO<sub>2</sub> Reduction through Lighter Ships and Reduced Bridge Materials

Longitudinally profiled (LP) steel plates have varied thicknesses in their lengthwise direction. Forces acting on ship bulkheads decrease toward the top of the bulkheads, so fixed-thickness steel plates add unnecessary thickness in the upper portions of bulkheads. LP plates with varied thickness matched to different levels of force help to reduce ship weight as well as the wasteful use of steel. JFE Steel has established the technology to efficiently manufacture LP steel plates in a variety of forms, contributing to CO<sub>2</sub> reduction through lighter ships and reduced use of material in transportation bridges.

### LP steel plates in ships

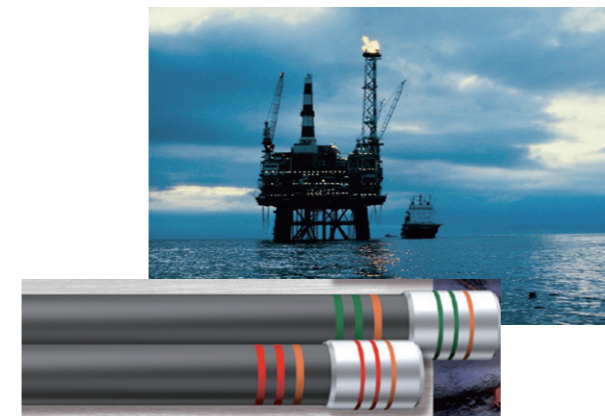


### LP steel plates in bridges



## Highly corrosion-resistant stainless-steel OCTG simplify processing and shorten delivery time

UHP®15CR and UHP®17CR are high-strength, highly corrosion-resistant stainless pipes for use in oil fields and gas wells as oil country tubular goods (OCTG). To go ever deeper in search of natural gas resources, OCTG must be resistant to increasingly high temperatures and pressures, as well as corrosive gases such as hydrogen sulfide. UHP®15CR can be used at temperatures up to 200°C and UHP®17CR at up to 230°C, including in environments with CO<sub>2</sub> and trace hydrogen sulfide. They also feature guaranteed yield strength of 862 MPa. Furthermore, they reduce the need for Ni and Cr components compared with conventional duplex stainless steel, thereby helping to conserve resources. What's more, they shorten delivery time by eliminating the need for cold working to add strength.



In use in the field

## Iron-steel slag products for marine restoration

JFE Steel develops applications and expanded uses for steel slag, a byproduct from the iron and steel manufacturing process.

The company's Marine Blocks®, are manufactured by a carbonate solidification reaction to fix CO<sub>2</sub>. Their surface is covered with calcium carbonate, the same substance found in seashells and coral, offering minute unevenness to allow seaweed and coral to attach and take hold.

Marine Blocks® are being used for projects and experiments in 35 locations of Japan. Overseas, they have been deployed in Indonesia for a coral reef-regeneration trial that

has been progressing nicely since 2010. The trial is being conducted by JFE Steel in cooperation with the North Sulawesi provincial government and parties connected to universities. As the decline of coral reefs expands worldwide, Marine Blocks® are attracting attention both in Japan and overseas as a means of preserving biodiversity.

Marine Rocks® are slag blocks also known as solidified hydrates. Since they excel in strength and ease of processing, Marine Rocks® are widely adopted as materials not only for environmental purposes but also civil engineering.

JFE Steel also is developing related steel slag technology to help improve water environments. The company, together with Hiroshima University, launched a demonstration project called the Fukuyama Inner Port District Study Group for Water Environment Remediation Using Steelmaking Slag in FY2012.

Going forward, JFE Steel will continue to contribute to marine-environment protection through applied technologies based on steel slag.



Steel slag



Coral growing on Marine Block® In North Sulawesi, Indonesia  
Photo courtesy of Professor Mineo Okamoto, Tokyo University of Marine Science and Technology

## Reducing Environmental Loads through Products and Technologies

### Used-plastic technology for blast furnaces contributes to CO<sub>2</sub> reduction

In 1996, JFE Steel developed the world's first total process to recycle used plastic as a reducing agent and then blow it into blast furnaces. Utilizing its expertise in recycling plants, blast furnaces and more, JFE Steel has introduced this new technology to reduce coke amounts required for the reducing agent, which leads to reduced CO<sub>2</sub> emissions.

The technology, which previously was awarded the Minister of Economy, Trade and Industry's Award for Circular Resource Techniques and Systems in FY2004, was presented a Low CO<sub>2</sub> Kawasaki Pilot Brand award in 2010 by the city of Kawasaki, the city where JFE Steel developed the technology, in honor of its contribution to CO<sub>2</sub> reduction.

In March 2007 JFE Steel constructed a pulverization plant for containers and package plastic in its East Japan Works Keihin District, where it developed and commercialized the world's first used-plastic pulverization technology. By employing this technology to increase the efficiency of the iron ore reduction reaction in furnaces using waste plastic, JFE Steel is advancing efforts to develop more beneficial blast furnace feed. Through its used-plastic blast furnace blowing technology, the company is conserving resources and reducing CO<sub>2</sub> and thereby contributing to environmental conservation.



Used plastic (before pulverizing)



After pulverizing



Plastic pulverization plant

### COURSE50 project to reduce CO<sub>2</sub> emissions in blast furnace process

JFE Steel is a core member of a project known as CO<sub>2</sub> Ultimate Reduction in Steelmaking Process by Innovative Technology for Cool Earth 50 (COURSE50), which is developing innovative technologies to reduce CO<sub>2</sub> emissions from steel manufacturing via the blast furnace process.

The company is working on CO<sub>2</sub> separation technology, which is based on a pressure swing adsorption (PSA) process and recovery technology, to capture unused waste heat contained in steel slag. One method uses a special adsorbent for efficient, low-cost separation and collection of the large amounts of CO<sub>2</sub> contained in furnace byproduct gases. A demonstration experiment is being carried out at a pilot plant in the company's Fukuyama District.

In a separate experimental project, methods are being developed to efficiently collect the unused waste heat emitted from steelmaking slag as hot as 1,600°C at a pilot plant in JFE Steel's Chiba Works.



Experimental equipment for separating CO<sub>2</sub> using PSA (Fukuyama District)

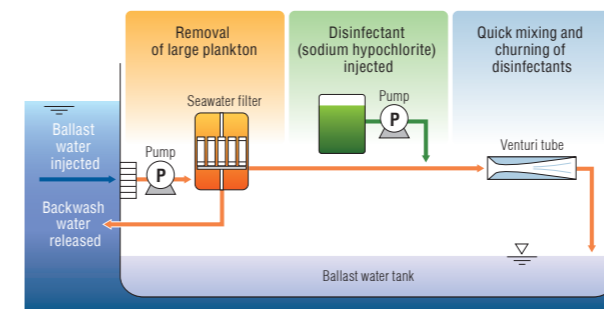


Experimental equipment for recovering waste heat from steelmaking slag (Chiba Works)

### JFE Ballast Ace Protecting Marine Ecosystems

When a ship empties its cargo at a port, seawater is injected into its ballast water tank to maintain stability. As ballast water contains marine organisms, it may impact local marine ecosystems when it is released at the next port. To solve this problem, JFE Engineering designed the JFE Ballast Ace system to render ballast water harmless so that it can be discharged safely.

At present, a steadily increasing number of countries have ratified the International Ballast Water Control Convention, which calls for the installation of ballast water treatment devices in ships. Implementation is expected soon. JFE Ballast Ace not only is simple, sure and safe, it the world's most inexpensive system of its kind, including running costs. Acclaimed around the world, JFE Ballast Ace had attracted orders for a cumulative 220 ships as of August 2012.



Ballast Water Management System



JFE Ballast Ace (filter and control panel)

### CYCLE TREE Multi-level Mechanical Bicycle Parking System for Low-carbon Societies

While bicycles are receiving renewed focus as an environmentally friendly means of transportation that does not emit CO<sub>2</sub>, the disorganized parking of large numbers of bicycles near train stations has become a social issue. To help resolve this problem, JFE Engineering developed CYCLE TREE, a fully automatic multi-level mechanical bicycle parking system that makes it possible to quickly park bicycles in confined areas, such as in front of train stations where space is typically limited.

Since launching CYCLE TREE in 2001, JFE Engineering has delivered 85 units to 14 locations across Japan, representing a total storage capacity of more

than 17,000 bicycles. More recently, the company developed a new model with a horizontal layout, adding to its unsurpassed record of delivering fully mechanized parking structures.

In the future, JFE Engineering will continue to advance the use of environmentally friendly bicycles through CYCLE TREE.



CYCLE TREE entrance



Auto-parking structure built with CYCLE TREE



# Recycling Technologies for Sustainable Societies

## JFE Group's Resource-recycling Solutions

The JFE Group engages in numerous recycling businesses by leveraging its steelworks recycling technologies and infrastructure, such as use of plastics in blast furnaces. In the engineering field, the Group has developed recycling businesses related closely to local communities, such as the sorting and storage of waste plastics and the conversion of refuse into solid fuel.

JFE is contributing to sustainable societies by offering disposal solutions according to the type of waste, including materials, chemicals and thermal recycling, aiming to minimize the amount of final disposal.



## JFE Group Recycling Businesses

### JFE Group Recycling Businesses

#### Toyama

- Rare metal recovery plant for spent catalysts

#### Kurashiki (Mizushima)

- Waste gasifying and melting furnace
- Waste wood carbonization plant
- Electric-furnace recycling plant

#### Fukuyama

- Waste plastic recycling plant for blast furnace
- RPF manufacturing plant
- Fluorescent tube recycling plant
- Kiln incinerator
- Leachate-controlled landfill
- Refuse-derived fuel (RDF) gasifying power generation plant (commissioned operation)

#### Sendai

- Plastic packaging waste sorting and baling plant
- Plastic material recycling plant
- Fluorescent tube recycling plant
- Recycled pallet manufacturing plant

Old fluorescent tubes processed in FY2011

**20 million tubes**

Old consumer appliances processed in FY2011

**1.22 million units**

#### Yokohama

- Kiln-stoker incinerator
- Kiln-ash melting furnace
- Liquid/sludge waste intermediate treatment plant
- Solid waste recycling plant
- Fluorescent tube recycling plant
- Plastic packaging waste sorting and baling plant
- Dry cell and battery recycling plant

#### Chiba

- Waste gasifying and melting furnace
- Food waste recycling plant

#### Aikawa

- ASR recycling plant
- RPF manufacturing plant

#### Kawasaki

- Waste plastic recycling plant for blast furnace
- Waste PET bottle recycling plant
- Can and PET bottle sorting and baling plant
- Kiln-stoker incinerator
- Solid waste recycling plant
- NF Board® manufacturing plant
- Consumer/office appliance recycling plant

Old containers and packaging plastic (or other plastics) processed in FY2012

**100,000 tons**

# Environmental Management

## JFE Group Framework for Environmental Management

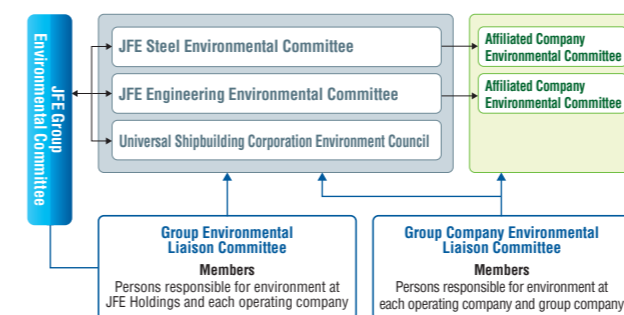
Under the JFE Group CSR Council, the JFE Group Environmental Committee chaired by the president of JFE Holdings manages environment-related issues, such as setting objectives for environmental protection, monitoring progress and improving the Group's environmental performance.

JFE Steel has an Environment Management Department at its head office and in each business office, as well as an Environmental Committee chaired by the president and an Environment Management Committee in each local office.

JFE Engineering carries out environmental protection activities under clearly defined objectives with the president serving as the senior manager. The Environmental Committee, with the help of its subordinate Environmental Expert Committee and Environmental Liaison Committee, is responsible for overall management and guiding subordinate companies, and both planning and implementing environmental measures.

Universal Shipbuilding's Environmental Committee, chaired by the director in charge of environment-related issues, formulates policy and promotes improvement by assessing and monitoring performance. Each business office has its own Environmental Committee to oversee local activities.

### Environmental Management System



## Deployment of Environmental Management System

Acquisition of ISO 14001 certification is an important part of each JFE Group company's voluntary environmental initiatives. All three operating companies have received certification for each of their individual produc-

tion sites. Following certification, the companies and their affiliates maintain their ISO 14001 status through regular inspections and reviews.

## Environmental Auditing

Each JFE Group company is audited by an ISO 14001 certification organization, and also organizes its own internal audits, which are conducted by externally trained specialists. The Audit and Environment Management departments of JFE Steel's head office conduct environmental audits of offices and subordinate companies. In FY2011, detailed audits were carried out after each unit conducted a self-examination by following a check sheet.

## Environmental Education

### JFE Steel pollution-control manager

**1,000** persons certified

The JFE Group actively provides education to enhance its corporate culture of environmental protection in which all employees participate. Education at operating companies includes training for new recruits and newly promoted employees, and for environmental preservation activities by position and job.

In addition to education concerning compliance with environmental laws and regulations, JFE Steel encourages employees to obtain qualifications as pollution control managers. In FY2011, 72 persons were qualified, bringing the total since 2005 to 1,000 people. Training for environmental managers was offered in Group companies seven times during the year.

In FY2011, JFE Engineering conducted education on general environmental issues three times, environmental laws and regulations three times and internal environmental auditing four times. Universal Shipbuilding carried out internal environmental auditor training once, marine pollution prevention exercises five times and environmental conservation education for coating-related workers two times.

Also, in February 2011 JFE Engineering held a study group on the theme of the Waste Disposal and Public Cleansing Act to deepen Group environmental managers' understanding.

### Supply Chain Management

The JFE Group, in accordance with the concept of life cycle assessment, strives to reduce environmental loads at various stages of its supply chains. Also, the Group's operating companies, working in cooperation with their business partners, strive to reduce their use of materials that have environmental loads. Group procurement policies help to protect resources and preserve the environment by adhering to all laws and regulations, and to the procurement principles prescribed under the Charter of Corporate Behavior developed by the Japan Business Federation. Going forward, the JFE Group intends to further accelerate efforts related to its supply chains.

### Environmental Accounting

#### ● Environmental Accounting Approach

The JFE Group has successfully saved energy and reduced environmental loads by making its production facilities more efficient and introducing more environmentally friendly equipment. Such efforts are accounted for as environmental activity promotion expenses, which comprise investment in energy-saving and environmentally friendly equipment and facilities, and also expenses required for environmental preservation and load reduction.

#### ● Capital Investment Trends

To save energy and reduce environmental loads stemming from production, the JFE Group actively invests in plant and equipment incorporating environmental technologies. Cumulative investment in energy saving, totaling ¥427.5 billion since 1990, has enabled the Group to achieve energy efficiencies that are among the highest in the world. In total, the Group has invested ¥580.4 billion in environmental protection measures since 1973.

#### ● Environmental capital investment and environmental activity expenses



Environment-related capital investment totaled ¥26.9 billion and expenses amounted to ¥126.0 billion in FY2011. Investment in global warming countermeasures, including energy saving, accounted for ¥11.5 billion, followed by ¥6.7 billion for air pollution countermeasures and ¥4.6 billion for water pollution countermeasures.

Environmental activity expenses included ¥37.3 billion for global warming countermeasures, ¥33.2 billion for air pollution countermeasures, and ¥17 billion for recycled industrial water. Environment-related R&D expenses came to ¥18.7 billion.

Environment-related capital investment as a percentage of overall capital investment was roughly 31%.

#### ● Results of Environmental Activities



In terms of environmental preservation costs, the JFE Group strives to lower its unit-based CO<sub>2</sub> emissions to help prevent global warming. It also works to reduce final disposal amounts through active recycling to help conserve natural resources. Targets include reducing discharges of airborne and waterborne substances that have pollution loads, and also complying with all statutory regulations concerning exhaust gas emissions and discharged water.

The monetary value in terms of energy-saving effect for the Group's environmental capital investment and environmental activity expenses in FY2011 is estimated at about ¥1.7 billion.

The JFE Group gives utmost priority to communication with all stakeholders, including in matters relating to the environment.

### JFE Tombo Michi Outdoor Class for Families to Observe Living Things 2012

In May 2012, JFE Engineering sponsored an outdoor class for parents and children to observe living organisms along the JFE Tombo Michi (JFE Dragonfly Path) and Tombo Ike (Dragonfly Pond). Through observation and sketching, participants learned about the lives and habitats of dragonfly larvae caught with scoop nets.

Dragonflies live in water during their larva stage and on land as adults, so they are considered to be useful environmental indicators. The fact that dragonflies and their larvae can be observed in Tombo Ike indicates, for example, that the pond has rich natural surroundings. Always open to the public, the JFE Tombo Michi attracts large numbers of visitors out for a relaxing stroll in nature. Through the Tombo Michi Fan Club established by community residents and volunteers, people clean the paths every month and enjoy activities such as growing and harvesting flowers and vegetables.

JFE Engineering will continue to actively carry out CSR activities, including to achieve the goals of the JFE Tombo Michi Charter established in April 2012.



JFE Tombo Michi

### Environmental Exhibition Eco-Products 2011

The JFE Group participates in exhibitions to provide stakeholders with information about its environmental activities.

In December 2011, it joined Eco-Products 2011

at Tokyo Big Sight. Under the theme "For the Future of Children — Addressing Environmental Challenges with JFE Technologies," the Group introduced its environmental activities in the fields of steel, engineering and shipbuilding. Global warming countermeasures presented at the show focused on the "Three Ecos" program in the steel sector, solar energy power-generation technologies and environmental urban development in the engineering sector, and CO<sub>2</sub> reduction through eco-ships and energy conservation technologies in the shipbuilding sector.




Eco-Products 2011

### Ecobeing environmental website

The JFE Group cooperates with the "ecobeing" environmental website. In the site's eco-people pages, the Group provides content, mainly on-site reports from Group facilities, about the motivations of employees to help create safe societies for children.

At the environmental exhibition Eco-Products 2011, JFE presented a video interview of star soccer player/coach Takeshi Okada talking about environmental concerns, and distributed a booklet that compiled interviews of eco-minded people.

 **Related link: ecobeing environmental website**  
[www.ecobeing.net](http://www.ecobeing.net)

### Communication with High School Students

The JFE Group participated in the FY2011 Environmental Symposium held by Kanagawa Sohgo High School. JFE's initiatives and technologies were introduced and social issues including the environment and energy were discussed from a variety of perspectives. The Group looks forward to supporting more opportunities to encourage environmental awareness among high school students and children, the future leaders of society.

# Social Performance Report

JFE Steel's corporate governance policy is an appropriate fair, and transparent blueprint for initiatives that are beneficial to stakeholders, including customers, business partners, stockholders and investors, and community residents. This Social Performance Report presents FY2011 initiatives implemented by the JFE Group and its operating companies to ensure compliance and to benefit stakeholders.



JFE product adopted for study (example) Customers and Clients **P. 40** Disclosure of information to investors Shareholders and Investors **P. 41** Manufacturing classroom Local Communities **P. 43** Passing on skills to new generations Employees **P. 46**

## JFE Group Standards of Business Conduct

All JFE Group executives and employees are expected to adhere to the following Standards of Business Conduct in all facets of corporate activities. These standards were created to embody the corporate vision of the JFE Group and go hand-in-hand with JFE's corporate values. Senior executives take the lead in communicating these standards to employees throughout the Group and in creating effective systems and mechanisms to ensure adherence. Suppliers are also asked to observe the JFE Group's Standards of Business Conduct. Senior executives are directly involved both in the resolution and implementation of measures, including taking steps to prevent violations. They are obliged to disclose information about any violation in a timely and accurate manner both inside and outside the Group, clarify the related authority and accountability, and shall deal rigorously with any offenses.

- 1. Provide quality products and services**  
Earn the trust and regard of customers by endeavoring to provide safe and high-quality products and services based on superior technology and by fully respecting and protecting the privacy of personal and customer information.
- 2. Be open to society at large**  
Endeavor to communicate with shareholders and the broader community, and actively disclose corporate information.
- 3. Coordinate and cooperate with communities**  
Actively contribute to communities as a good corporate citizen in a spirit of coordination and cooperation.
- 4. Globalize**  
Endeavor to achieve mutual understanding with people around the world, working from a global perspective and respecting international regulations and local cultures and customs.
- 5. Exist in harmony with the global environment**  
Proactively contribute to the achievement of better living standards and the creation of societies that exist in harmony with the global environment.
- 6. Maintain proper relations with government and political authorities**  
Endeavor to build and maintain sound and proper relationships with government and political authorities.
- 7. Disassociate from antisocial forces**  
Refuse to associate with any person or organization that threaten social order and stability, and reject all illegal and improper demands.
- 8. Respect human rights**  
Respect all employees and members of the general public as individuals and refrain from any and all discrimination in corporate activities.
- 9. Provide rewarding work environments**  
Provide employees with attractive, safe, and rewarding work environments.
- 10. Comply with laws and ordinances**  
Comply with all laws and ordinances, endeavor to compete fairly and freely, refrain from illegal business activities, promote sound business practices, and be faithful and sincere in all activities and dealings.

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## Social Performance Report Compliance

### About Compliance

Every aspect of a business is scrutinized with regard to corporate social responsibility (CSR) because society demands high levels of fairness and transparency. The JFE Group makes compliance — the foundation of CSR — a key priority, and takes steps to ensure that all employees embrace the importance of compliance and work to promote it.

### Raising Compliance Awareness

Cases handled by corporate ethics hotline in FY2011 **26**

The JFE Group operates the Corporate Ethics Hotline to help ensure that important information regarding compliance is communicated from the front lines to top management rapidly and accurately. The hotline is managed according to regulations and rules that protect people who report information or seek advice, and thereby promotes the active provision of information. After the facts of a case are reviewed, the outcome of the investigation is communicated to the hotline caller. Access has been expanded to Group companies, enabling the hotline to serve as a pillar of compliance enhancement in the JFE Group.



Hotline Poster

During FY2011, the Corporate Ethics Hotline received 26 calls regarding matters at JFE Holdings and its operating companies.

### Compliance Guidebook

Compliance guidebook  
Approx. **68,000**  
copies distributed

As part of its efforts to strengthen compliance-related initiatives, the JFE Group distributes its Compliance Guidebook to all employees and executives. This guidebook was first issued in June 2006 and supplemental versions followed in 2007 and 2009.

The guidebook presents over 100 case studies written in plain language to help employees understand JFE's standards for complying with laws and regulations, as well as internal rules based on social norms. Situations occurring in daily operations that can be unclear or confusing are covered, with each case accompanied by an explanation prepared by the relevant department and reviewed by an attorney for legal compliance. The guidebook also is used as a textbook for company training and must be read by employees.



Compliance Guidebook

### ● Awareness Survey

The JFE Group conducts its Corporate Ethics Awareness Survey to quantitatively assess employees' awareness of ethics and identify possible risks, as well as to help employees stay informed about JFE's corporate vision. Recent surveys indicate that many employees believe compliance awareness and behavior have strengthened at JFE. More specifically, awareness of corporate policies and values is thought to have improved greatly, and compliance systems and activities are said to have steadily taken hold among employees.

The results of such awareness surveys are being put to use in practical measures aimed at creating a better company.

### ● Compliance Training

To ensure thorough compliance, the JFE Group conducts compliance training on individual topics, such as antimonopoly law, prevention of insider trading, security export controls, the Construction Business Act, and the Foreign Corrupt Practices Act. Compliance education includes training targeted at managers as well as new hires.

#### Primary Training at Group Companies (FY2011)

Company	Training	Participants
JFE Steel	Antimonopoly Law	743 (33 sessions)
	Other law-related training	1,220 (50 sessions)
JFE Engineering	Antimonopoly Law	1,575 (55 sessions)
	Construction Business Act and other regulations	2,005 (69 sessions)
Universal Shipbuilding	Compliance	312 (4 sessions)
Kawasaki Microelectronics	Confidential information management	328 (e-learning courses)
	Security Export Control	133 (e-learning courses)
	Information security management	311 (e-learning courses)

### ● Compliance Pledge

JFE Group employees annually set job goals and, upon that occasion, pledge to comply with all laws and regulations, both internal and external in the performance of their work. Having employee make that pledge helps to foster compliance awareness.

### ● Compliance Rules Awareness Activities

October, JFE Steel's designated Compliance Month, is when individual worksites conduct compliance aware-

ness activities to encourage employees to become more aware of, think about, and gain a better understanding of the rules. Individual departments hold sessions in which participants read parts of the Compliance Guidebook, supporting information posted by the Legal Department on the company intranet, as well as legal texts, internal regulations, and other information. The aim is to foster awareness of the need for compliance and encourage employees to consider whether their work practices actually comply with relevant rules. Afterwards, work practices and company rules are revised as required.

### ● Antimonopoly Law Compliance Initiatives

JFE Steel and JFE Engineering, both regretting past violations of the Antimonopoly Law, continue to implement thorough measures to eliminate the possibility of future infringements. In addition, the internal audit departments of both companies check to see if any aspects of contact with other companies could be viewed as violating Antimonopoly Law. They also check if initiatives aimed at promoting legal compliance with the law are functioning properly. Audits are regularly conducted at all business locations, including those of branch offices. Other group companies also are implementing initiatives to promote compliance with the Antimonopoly Law.

### Key Initiatives of Both Companies

- Commitments by top management
- Antimonopoly Law training based on specific cases of how violations can seriously impact companies and individuals
- Revision of work regulations to clarify Antimonopoly Law violations that could lead to disciplinary action
- Strengthening of rules on contact with other companies in the same industry

In addition, JFE Steel monitors the activities of external organizations in which its sales department participates, and JFE Engineering works to ensure that its order-acceptance process is transparent and in conformance with antimonopoly requirements.

### Working Against Antisocial Forces

The JFE Group Policies for Addressing Antisocial Forces works to ensure sound company management through uniform organization-wide measures in response to anti-social (organized crime) activities.

### ● Addressing Antisocial Forces

The JFE Group takes care to completely avoid any relationship with antisocial forces. The General Administration and Legal Affairs divisions of each group company are the organizational units responsible for dealing with issues related to antisocial forces. These divisions report any related incident, establish relevant rules, and work with police and other authorities to resolutely address such matters.

### ● Rejection of Antisocial Forces

#### Clarification of JFE Group Standards of Business Conduct

The JFE Group Standards of Business Conduct clearly state that the group refuses to associate with any element or organization that threatens social order and stability, and rejects all illegal and improper demands.

#### Regulations for Addressing Violence Directed at Companies

The Group has its own Regulations for Addressing Violence Directed at Companies and related standards for addressing antisocial forces, including a manual on the initial steps to take in responding to violence targeting companies.

### Training

Thorough understanding of the JFE Group Policies for Addressing Antisocial Forces and specific response standards among all executives and employees is ensured through training and other steps such as distribution of the Compliance Guidebook.

### Database and Terms for Fighting Organized Crime

A database of antisocial activities is being created and terms aimed at fighting organized crime are being included in agreements signed by JFE Group companies.

### Information Security Management

The JFE Group's information management system supports the smooth and appropriate conduct of business.

### ● Prevention of Improper Use of Information

1. Authentication measures of JFE's integrated security system

2. Personal computer startup authentication using passwords and additional factors (IC cards, etc.)

### ● Prevention of Information Leaks

#### Loss or Theft

1. Biometric authentication for server room access
2. Office-access control
3. Use of security wires to protect hardware
4. Hard disk encryption for mobile computers
5. Encryption of removable media

#### Measures against Information Leaks

1. Limits on use of removable media and maintenance of logs
2. Checking e-mail sent to external parties
3. Retention of all e-mail sent to external parties
4. Limits on use of Web-based e-mail
5. Limits on use of Web-based bulletin boards, etc.

### ● Measures against External Threats

1. Measures to prevent malware intrusion
2. Firewall-based restrictions on access from outside

### ● Privacy Protection

The JFE Group has formulated the following policies on the handling of personal information to facilitate the smooth and appropriate group operations.

#### Basic Policies for Protection of Personal Information

1. The JFE Group will, in light of the growing use of personal information resulting from advances in data communications, endeavor to protect the rights and interests of the individual while also respecting the utility of the personal information it holds.
2. The JFE Group will observe the "Law concerning the Protection of Personal Information" and all other relevant laws and ordinances, and will endeavor to adhere to both the spirit and the letter of the law as it protects personal information.
3. The JFE Group will endeavor to appropriately protect personal information by formulating internal rules on the management of personal information and by informing, educating and training its employees on these rules and on all applicable Japanese laws and ordinances. The JFE Group will also review and improve this privacy statement and internal rules on an on-going basis.

### Quality Assurance System

#### ● JFE Steel

JFE Steel has acquired ISO 9001 and various other quality assurance (QA) certifications, including the JIS mark and approvals from ship classification bodies. In response to globalization needs and customer demands, the company has been certified for standards specific to countries where the company has business. Also, to meet demands for more advanced and functional quality, JFE Steel is deploying cutting-edge sensors and materials testing facilities as part of investing in quality assurance. The company will continue strengthening its quality assurance structure to provide products that all customers can use with confidence, and thereby enhance trust in the JFE brand.



Corrosion testing facilities

#### ● JFE Engineering

JFE Engineering has developed a company-wide quality management system, including quality-assurance systems spanning all work processes. Also, FAQ manuals covering product features are provided to customers to help meet their rigorous demands for quality.

#### JFE Engineering's Quality Management System



#### ● Universal Shipbuilding Corporation

Universal Shipbuilding has obtained various certifications for each of its shipyards, including ISO 9001 and qualifications from ship-classification bodies and the Japanese government. The standards underpinning these certifications are part of the quality-assurance systems deployed in each shipyard to ensure customer satisfaction.

### Fair Competition and Trade

Compliance in purchasing and procurement activities is critical to becoming a good business partner and developing mutual understanding and trust with suppliers. Each JFE operating company clearly defines its purchase/procurement policy and discloses it to suppliers to help them maintain the same high standards.

#### WEB Purchase/Procurement Policies (Examples)

JFE Steel  
[http://www.jfe-steel.co.jp/company/purchase\\_policy/index.html](http://www.jfe-steel.co.jp/company/purchase_policy/index.html)  
 (Japanese only)

Universal Shipbuilding  
[http://www.u-zosen.co.jp/procurement/kihon\\_hosin.html](http://www.u-zosen.co.jp/procurement/kihon_hosin.html)  
 (Japanese only)

### Appropriate Export Procedures

JFE Steel is taking steps to promote international peace and security by working against the spread of weapons of mass destruction and excess accumulation of conventional weapons. The company carries out inspections to confirm the final destinations, customers and applications of its exported products, and follows all related export procedures. In addition, the Company's Legal Affairs Department conducts internal briefings to spread knowledge of export-related laws and regulations, such as the Foreign Exchange and Foreign Trade Act.

During the reporting year, the former Kawasaki Microelectronics carried out various measures, including e-learning to enhance employee understanding of export security controls, to help ensure the appropriateness of its export procedures.

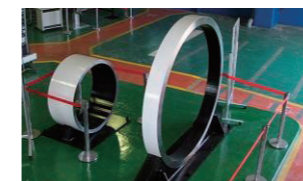
### Customer Satisfaction

#### ● JFE Steel

##### Facility for Joint Development with Customers

JFE Steel has its own facilities for conducting joint research and development with customers. These include the Customers' Solutions Lab for auto-industry customers and the Steel Structural Materials Solutions Center for customers involved with infrastructure. The facilities are equipped with equipment for widely varying research and experimentation, plus conference rooms and space for exhibiting research results. They have achieved a number of successes in resolving customers' technological issues through testing and discussion.

In August 2010, the Steel Structural Materials Solutions Center's exhibition area for civil-engineering steel materials underwent a major renewal for improved customer satisfaction.



JFE product adopted for study  
 High-strength steel tubes (P-500 and P-630) for Tokyo Skytree® tower

#### Operational System

JFE Steel's J-Smile system, launched in 2006, has enabled the company to create a strong management information infrastructure and operational system to better leverage management resources and increase customer satisfaction. J-Smile has enabled JFE Steel to strengthen its response to customer needs in areas such as lead-time, delivery date, quality assurance, and product development. At the same time, existing systems at steelworks have been upgraded for effective consolidated operational control and management.

For its success in realizing operational processes and systems that facilitate innovation, J-Smile received the FY2006 Minister of Economy, Trade and Industry Award for Companies, 2nd Prize at the IT Japan Awards 2007, and the World Information Technology and Services Alliance IT Prize 2008.

#### Customer Strategies

JFE Steel regularly conducts customer questionnaires and interviews and then uses the information to draft strategies for greater customer satisfaction. The company also devel-

ops business strategies that are shared among the sales departments, business planning department, steelworks, and research laboratories, thereby facilitating unified customer care, as well as to accelerate operations.

#### Nurturing Capabilities of Sales Department

The Sales Department holds meetings by gathering sales managers from headquarters, branch offices, and foreign offices to discuss how best to work with customers and create better relationships with them. The meetings focus on learning from reports on topics such as how to overcome challenges and reach resolutions to enhance customer relationships, and what is being done to further enhance customer relationships. The above two points are considered by the participants then take new ideas back to their respective sales offices to strengthen local capabilities. Reflecting the accelerating globalization of JFE's operations, Q&A and information-exchange sessions are increasingly being conducted in English.



Presentation on dealing with customers

#### Sales Personnel Who Excel in Customer Relations

The Sales Department of JFE Steel conducts basic courses for newly appointed sales personnel on the fundamentals of steel materials, to foster their capabilities for technical discussions with customers, quick evaluation and handling of complaints, and sure internal communication of hints that lead to product development. The effort is backed by handbooks on the components and end uses of products in specific sectors and fields.

#### ● JFE Engineering

##### Application of Customer Evaluations

Through customer surveys and interviews and construction evaluation forms aimed at customers of our products and services, we collect and accumulate evaluations on our construction management, product quality, advanced technologies, and innovation. Our divisions analyze this information and use it for purposes such as quality improvements and enhancement of new product development and after-sales service, with the aim of maximizing customer satisfaction.

Returns to Shareholders

JFE Holdings considers returns to its shareholders to be one of its top management priorities. The company strives to ensure a sustainable financial position to aggressively provide dividends while also proceeding with investments designed to achieve new growth and improved financial health of the Group.

The goal is to maintain a basic payout ratio of around 25% and proactively invest in areas such as securing interests for resource acquisition and expansion of operations in Asia.

**WEB** Disclosure Policy  
[www.jfe-holdings.co.jp/investor/disclosure-policy.html](http://www.jfe-holdings.co.jp/investor/disclosure-policy.html)  
(Japanese only)

Communication with Shareholders and Investors

Shareholders



JFE Holdings, viewing its general meetings of shareholders as a chance for dialogue with shareholders, sends invitations at the earliest possible date in an effort to maximize attendance and avoid days on which other shareholder meetings are concentrated. For shareholders who cannot attend, the company allows voting online in addition to providing the normal proxy form.

To improve shareholders understanding, the company has been holding plant tours and briefing sessions. In FY2011, workplaces at JFE Steel, JFE Engineering and Universal Shipbuilding Corporation held 26 such events for 1,911 shareholders.

Investors



The JFE communicates actively with investors, including by receiving and visiting institutional investors and securities analysts. Individual investors are provided with briefings, videos of investor meetings and e-mails concerning IR information. Important information is provided to overseas investors via press releases in English.

An IR Section in the Finance and IR Department performs the important task of keeping all workplaces and Group companies informed about market and institutional investing trends and third-party evaluations of the JFE Group.



Information also is provided to investors via the company's website.  
Japanese: [www.jfe-holdings.co.jp/investor](http://www.jfe-holdings.co.jp/investor)  
English: [www.jfe-holdings.co.jp/en/investor](http://www.jfe-holdings.co.jp/en/investor)

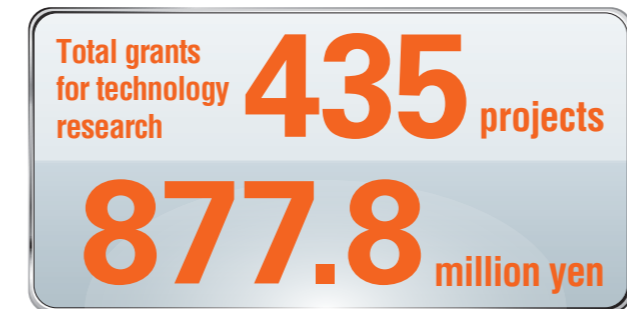
Philanthropic Activities of the JFE 21st Century Foundation

The JFE 21st Century Foundation, which was founded as the Kawasaki Steel 21st Century Foundation in 1990, took its current name in 2003 and then was converted into a nonprofit foundation of the JFE Group on April 1, 2012. The Foundation continues to fulfill its original mission of being open to society and promoting the common good.

Support for Technology Research

The foundation has supported technology research at universities since FY1991.

In FY2011, when the foundation fielded 152 grant requests, a total of 40 million yen was provided in the form of two-million-yen grants each provided to 10 projects involving iron and steel technologies and another 10 projects concerning environmental technologies, including global warming prevention.



Presentation ceremony

Asian History Studies



The foundation began awarding grants to support Asian history studies at Japanese universities in FY2005. During FY2011, 95 applications were received and seven grants, worth 1.5 million yen each and 10.5 million yen in total, were ultimately awarded.

Support for Education in Steel-related Communities

Since FY1991, the foundation has been sponsoring JFE 21st Century Foundation prizes for contests in the writing of essays and poems, including tanka and haiku poetry. The contests are conducted by the Japan Overseas Educational Services for Japanese elementary and middle school students studying overseas. Copies of *Chikyu ni Manabu* (Learn from the Earth), a collection of the winning entries in FY2011, were presented to 478 elementary schools, 215 middle schools, 105 public libraries and 11 education committees.

Events in FY2011

- Jo Chihun Cup Go Competition (Chiba city)
- Chiba Prefectural Youth Go Competition (Chiba and Funabashi)
- International Music Day Concert, Chiba Citizens' Music Festival (Chiba)
- MUZA Lunch & Night Concert (Kawasaki)
- Community Festival (Kawasaki)
- Yokohama Children's International Peace Speech Contest (Yokohama)
- Handa Community Industrial Festival (Handa)
- Mie Prefecture High Schools' Robot Tournament (Tsu)
- Kurashiki Music Festival (Kurashiki)
- Kurashiki Shogi Tournament (Kurashiki)
- Fukuyama Rose Festival (Fukuyama)
- The World of Matsuri (Fukuyama)



Fukuyama Rose Festival

## Local Contribution Activities

### ● Education at Elementary Schools

The East Japan Works of JFE Steel conducts plant tours and outbound classes for students at nearby elementary schools. Children are invited to plant tours and then company employees visit schools to teach about steelmaking, the company's overseas activities, the relationship between the steelmaking industry and global warming, and other topics. From this fiscal year, the works is reaching out to even more elementary schools with programs matched to their interests.



Course at elementary school

### ● Manufacturing Classroom

Since FY2003, JFE Steel has been working with elementary schoolchildren in the Chita area of Aichi Prefecture to help them appreciate that making things is interesting and fun. Retired employees teach and assist children to make accessories out of cast parts and then accompany them on plant tours. In FY2011, the company held 12 tours for 768 students. Classrooms on a similar scale are planned in FY2012.



Manufacturing classroom

### ● Activities for Host Communities

The JFE Group annually opens up its manufacturing facilities to local residents for demonstrations, tours, and other events. In addition, recreational facilities are made available for community sports activities, and the Group also sponsors soccer, baseball, volleyball, basketball, and other sporting events. Such activities help to promote and expand sporting activities in the communities.



#### Event schedule (2011)

Name	Date held	Region
JFE2011 Chiba Festival	October 23	East Japan Works, Chiba
Seventh Community Festival	October 30	East Japan Works, Chiba
JFE West Japan Festival in Kurashiki	November 3	West Japan Works, Kurashiki
JFE West Japan Festival in Fukuyama	May 8	West Japan Works, Fukuyama
Handa Community Industrial Festival	November 12	Chita Works
Tsu Autumn Festival	October 29	Tsu Works, Tsu Shipyard
Ariake Family Festa	September 24	Ariake Shipyard



JFE West Japan Festival in Fukuyama

## Support for External Organizations

### ● UN World Food Programme

The Japan Association for the UN World Food Programme is an NPO-accredited supporter of the UN World Food Programme (WFP), a United Nations organization with the mission of eliminating hunger and poverty. The association conducts promotional activities to help expand the circle of WFP support in Japan, including collecting donations to assist WFP activities, conducting public relations activities, and promoting cooperation with companies and organizations. The JFE Group supports these activities.

### ● Training for Foreign Doctors

Assisted by private corporations, Toranomon Hospital has been managing the Japanese Council for Medical Training (JCMT) to provide training opportunities for foreign doctors. This program invites doctors from developing countries primarily in Asia to Japan, allowing them to go through advanced medical training and then return to their home countries to promote enhanced medical standards. It also aims to foster friendship between Japan and the countries that dispatch the doctors. The JFE Group provides assistance to this undertaking.

### ● Japanese Foundation for Cancer Research

The Japanese Foundation for Cancer Research is helping to overcome cancer by playing a leading role in research and treatment, as well as human resources development in Japan, since its establishment in 1908. The JFE Group supports the foundation's activities.

## Support for Youth Development

### ● Japanese Language Speech Contest

The China Education Association for International Exchange, The Society of Chinese Professors in Japan and Nikkei Inc. have been sponsoring the All China Japanese Speech Contest since 2006. The JFE Group supports the contest as a way to promote international exchange and contribute to society.



All China Japanese Speech Contest

### ● High School Essay Contest

The Japan Science & Engineering Challenge (JSEC) is a national science paper contest for high school and technical college students. JFE Steel began supporting the JSEC in 2006 out of its desire to foster the development of future scientists and engineers. In 2011, the JSEC JFE Steel Prize was awarded to a high school associated with Hiroshima University.



JFE Steel Award

### ● FY2011 Internship Achievements

JFE hosted 130 students from around Japan as interns in FY2011. In addition, JFE Engineering hosted four interns primarily at its Technical Research Center, and Universal Shipbuilding Corporation hosted 14 interns at its Ariake and Tsu shipyards.

### ● Ecology Tour

Eco-Products 2011, one of the largest ecological product exhibitions in Japan, held at Tokyo International Exhibition Center in December 2011, offered ecology-oriented tours tailored for young visitors. JFE Steel participated in the program to provide the children with easy-to-understand presentations about the group's environmental initiatives.

## Aid for Disaster Relief

The JFE Group provides financial assistance to support the recovery of areas stricken by major disasters. Following flooding in northern and central Thailand, some five million yen was donated to the Thai Red Cross Society in December 2011.

## Deployment of Human Resources

### Recruitment

With Japan on the verge of a massive generational change due to baby-boomer retirements, securing outstanding human resources is a key issue for the JFE Group. Both new university graduates and midcareer personnel are being recruited from increasingly broader channels, in view of labor supply and demand conditions going forward.

#### Personnel Data

	JFE Steel	JFE Engineering	Universal Shipbuilding
Employees (Individuals) <sup>1</sup>	14,081	3,167	3,125
Recruits (Individuals) <sup>2</sup>	581	137	120
Average Years Employed (Years) <sup>1</sup>	20.7	17.9	17.7
Job Turnover Rate (%) <sup>3</sup>	0.8	0.5	0.9

<sup>1</sup> As of March 31, 2012

<sup>2</sup> Total new graduates and mid-career recruits

<sup>3</sup> Job turnover rate = Voluntary resignations/Total employees

### Human Resource Development

In parallel with its expanded exports and overseas businesses, JFE Steel has been investing in the development of global human resources. To foster professionals well-informed in their various fields of specialty, the company educates people on-site in management and language skills. Increasingly comprehensive study and training also includes more opportunities for younger employees to go abroad. In FY2011, JFE Steel provided about 50 opportunities for overseas study and training, mostly for younger employees.

JFE Engineering, in addition to its personnel training, has adopted an internal recruiting system by employees' appealing to optimize its allocation of personnel and make the most of their capabilities.

In FY2012, the JFE Group introduced a system by that allows employees not only to propose business opportunities but also to take charge of execution.

Universal Shipbuilding works to steadily nurture outstanding human resources. The company's entire study and training system was reviewed in FY2011 to develop next generation human resources, ensure the growth of individuals, and establish a system to guarantee growth as a corporation.

### Work-life Balance

JFE Steel Systems for Broader Personnel Support

#### 1. Extended Child Care Leave

Employees can take extended child care leave until their child reaches 18 months of age. Thereafter, under certain circumstances, such as difficulties in finding a vacancy at a child care center, an additional extension may be allowed to the end of March of the year following expiration of the 18-month period.

#### 2. Shortened Working Hours

An employee can shorten their working hours by two hours per day until their child finishes the sixth grade of elementary school.

#### 3. Leaves for Work/Life Balance Support (WLBS)

An employee who must provide nursing care or take part in school events may take up to five days of leave per year until their child finishes elementary school. Employees with more than one child may take up to 10 days of leave per year. Also, WLBS leave may fill the shortage of shortened working hours.

#### Child Care/Nursing Leaves

(People)

	FY2009	FY2010	FY2011
Child care leave	37 (1)	34 (2)	37 (2)
Nursing leave	3 (1)	4 (3)	4 (3)

Note: Figures in parentheses are males.

### Helping Women to Thrive

As of April 2012, JFE Holdings and its operating companies had approximately 6,000 career-track employees (about 4,200 in management positions), including 162 women (41 in management positions). New recruits in FY2012 included 36 out of 282 women in positions with prospects for promotion, of which 18 out of 59 were in white-collar positions with prospects for promotion.

The JFE Group places a top priority on creating working environments in which women can thrive. The company is not only working to increase its hiring of women, but also improve their working conditions. Consideration is being given to a wider breadth of areas to which women are assigned, along with other steps toward a greater range of roles women can play in the Group.

JFE Steel established the Diversity Promotion Sec. in January 2012 to empower new female hires.

### Employment of People with Disabilities

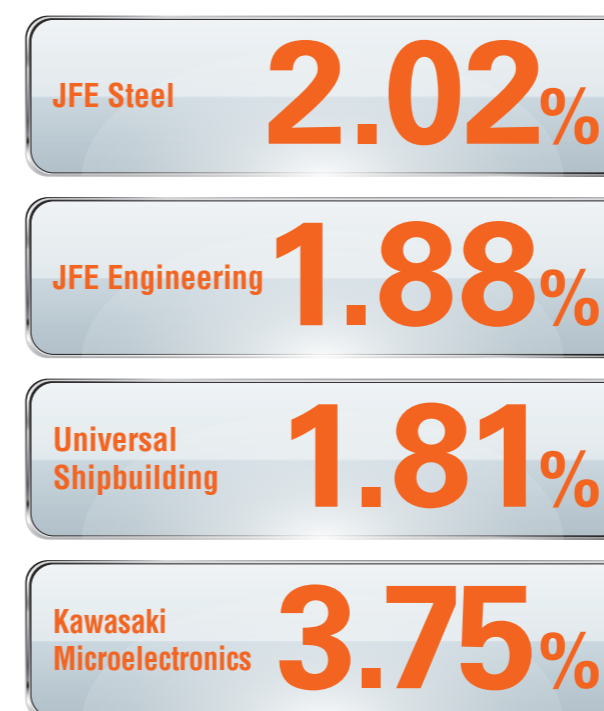
To provide opportunities for people with various disabilities to fully exercise their capabilities, the JFE Group operates three special subsidiaries: JFE Apple East Corporation, JFE Apple West Corporation and Mie Data Craft Co., Ltd. In addition, Ariake Business Support, a special subsidiary set up at Universal Shipbuilding's Ariake Shipyard in April 2011, hired 10 people with disabilities. The JFE Group will continue to promote the employment of people with disabilities with a focus on these special subsidiaries.

#### Employment of Persons with Disabilities (as of every June)

	2010	2011	2012
JFE Steel	1.99	1.95	2.02
JFE Engineering	2.06	1.86	1.88
Universal Shipbuilding	1.40	1.51	1.81
Kawasaki Microelectronics	3.33	3.67	3.75

#### Ratios of employees with disabilities (as of June 2012)

Note: Statutory employment rate is 1.8%.



### Passing on Skills and Reemploying Retirees

With individual steelworks all expressing the desire to continue applying the valuable know-how of veteran employees, JFE Steel created a Senior Expert Program for rehiring employees who reach the mandatory retirement age of 60. As of April 2012, JFE Steel had rehired approximately 1,120 retirees under this program. Furthermore, the company is devoting significant time and effort to establish a program to help junior and mid-level employees improve their techniques and skills. Rehires support the program as instructors and pass on their knowledge.

JFE Engineering also has a reemployment system to transfer the skills and project experience of veteran employees to younger generations. The company has established a wholly owned subsidiary, JFE Career Navi, to aid in the continued careers of such retirees.

At Universal Shipbuilding, which is expecting a significant generational shift, veteran employees instruct younger employees on a daily basis in order to pass on techniques and skills as expeditiously as possible. The company has also established a department in charge of technical assistance, and assigns a mentor for each young worker to provide technical guidance.



Instruction in operating hydraulic equipment



Positive, Productive  
Working Environments

Human rights course trainees in FY2011  
JFE Steel:

3,159

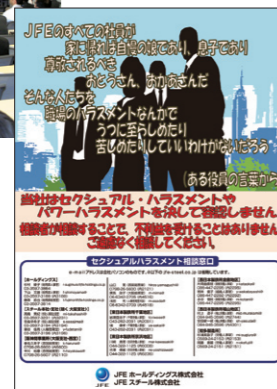
● Respecting Human Rights

The JFE Group, viewing respect for human rights as both a corporate social responsibility and a foundation of management, works to raise awareness of human rights among all employees. Specific examples include appointment of employees to oversee human rights education, implementation of human rights training courses, and guaranteed employment opportunities and promotion of fair human resource management.

Sexual harassment is prevented through measures including the establishment relevant work regulations, holding training, displaying posters, and setting up hotlines staffed by multiple men and women at each business location. Training also covers the prevention of power harassment. During Human Rights Week, leaflets with messages from senior management are distributed and employees are encouraged to submit related slogans.



Human rights training course



● Employee Health and Safety

Providing for the safety and health of employees is a basic requirement of manufacturers and fundamental to the continued existence of any company.

Based on its fundamental belief in the philosophy of "safety first" as declared by the company president himself, JFE Steel strives to enhance its safety measures through three key management pillars: resolving health and safety issues in communities and workplaces, promoting mental and physical health, and strengthening health and safety at group companies.

JFE Engineering works to achieve safety through risk assessment and the promotion of mental and physical health at approximately 2,000 construction and other work sites of the group in Japan. The overall aims are to eliminate accidents and improve safety and health.

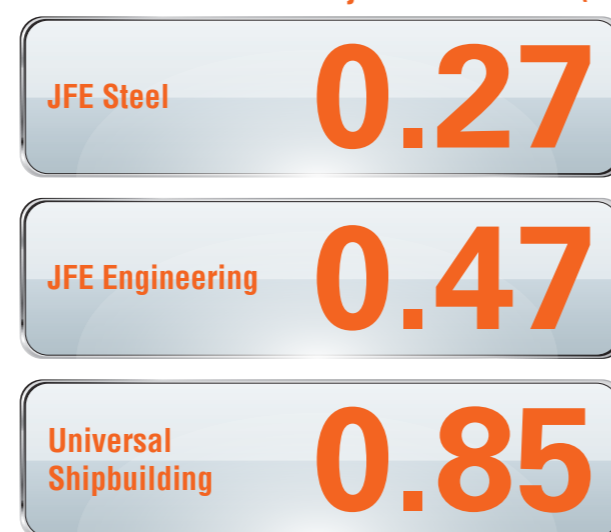
Universal Shipbuilding Corporation has implemented its Occupational Safety and Health Management System at all workplaces and continues to steadily enhance such activities to strengthen occupational safety and health management.



Occupational Safety and Health Forum



Rate of lost-worktime injuries for FY2011 (%)



● Disaster-prevention Measures

Drawing on the experiences of the 2011 Great East Japan Earthquake, JFE Steel is further strengthening its disaster preparedness. Measures include new evacuation procedures in the event of a tsunami, stockpiling emergency supplies of food, water and so on, strengthening company-wide command and control functions, and enhancing the backup of important data. Preparations are reviewed in line with national and local government studies, and capabilities are being enhanced through drills and other activities.

All employees at JFE Engineering have been issued a portable Earthquake Disaster Manual. Drawing on the lessons of the Great East Japan Earthquake, the manual specifies what employees should do during a major disaster.

● Health Management

The JFE Group carries out health management initiatives to ensure that all employees can fully exercise their capabilities while maintaining healthy minds and bodies.

JFE Group Initiatives

- Preventive measures for workplace related illness, including improved working environments, appropriate work demands, and occupational health education
- Regular physical examinations
- Physical examination follow-up (counseling and adjustments in assignments, as required)
- Treatment and follow-up by partner hospitals and their networks
- Mental health care (counseling services, education of managers, care for those in need, etc.)

JFE Steel initiatives (besides above)

- Review of health-management measures at industrial physician meetings
- Hosting of case-study reviews by industrial physicians
- Operation of health management systems
- Achievement of an occupational health management system (expansion to occupational health 3 management)
- Specialized healthcare advice
- Prevention of passive smoke countermeasures, including basic regulations and non-smoking (or segregated) areas
- Preventive measures against new influenza

Development of Dynamic  
Work Environments

● Building Sound Labor-management Relations

The JFE Group works to build sound, constructive labor-management relations. Believing that honest communication is the foundation for sound labor-management relations, JFE Steel convenes the Labor-Management Business Discussion Committee four times a year to bring the company's president and other executives together with labor representatives.

JFE Engineering and Universal Shipbuilding, along with their Central Labor-Management Committees, create additional opportunities for their presidents and other executives to share opinions with labor representatives.

● Dynamic Workplaces through  
Small-group Activities

This year the JFE Group is celebrating the 50th anniversary of small-group activities first launched by its predecessors Kawasaki Steel Corporation and NKK.

Throughout JFE Steel, approximately 1,500 small groups carry out J1 Activities\* for quality and work improvement. In addition, the JFE Family Result Reporting Conference, which includes participation from domestic and overseas group companies, is organized twice a year and groups selected through competition are given opportunities to go overseas as an incentive.

Similarly, about 200 small groups participate in JE1 Activities\* at JFE Engineering, bringing work units together to tackle key issues in the workplace.

In FY2011, Universal Shipbuilding Corporation introduced workplace patrols by external consultants and began reinvigorating small-group activities.

\* Activities to make the company No. 1, known as J1 at JFE Steel and JE1 at JFE Engineering.

● Exchanging Opinions with Employees

JFE Engineering periodically holds meetings with all employees to explain management policies. The company also encourages executives and employees to frequently hold discussions to exchange their opinions and views.

## Social Performance Report

# Awards and Accolades

### Employee Recognition Awards

The JFE Group has an awards program for recognizing the outstanding accomplishments of employees, companies, and organizational units with regard to business activities and operations.



Awards ceremony of JFE Steel President's Awards

#### Internal Awards

Name of Prizes/Awards	Reasons for Award Selections	Award-winning Departments
<b>JFE Steel: JFE Steel President's Award</b>	2 Awards for Excellence: Establishment of Steel Plate Manufacturing Technology for World's Thinnest Cans, et al.	East Japan Chiba Works (Chiba Area), No. 1 Cold-rolled Steel Sheet Research Department, et al.
<b>JFE Steel: New Product Development Award</b>	440MPa-class UNI HITEN for Automobile External Panels Martensitic High-Performance Stainless Seamless Line Pipes	Steel Laboratory, Thin Plate Research Department, et al. Chita Works, Product Technology Department, et al.
<b>JFE Engineering: Award for Top Revenue-Generating Team</b>	3 Awards for Particular Excellence: Order Receipt for Break-water Wall at Hamaoka Nuclear Power Station	JFE Engineering Steel Structure Headquarters Coastal Steel Structure Department, Nagoya Branch, et al.
<b>JFE Engineering: Award for Best Invention</b>	Ballast Water Management Equipment: New-Type Filter Development and Commercialization	JFE Engineering Industrial Machinery Headquarters Marine Machinery Department
<b>Universal Shipbuilding: President's Award for Outstanding Performance in 2011</b>	Order Receipt for the G Series Bulk Carrier	Commercial Ship and Marine Sales Department, Technology Supervisory Department, Commercial Ship Planning Department

### External Awards

Prizes/Awards	Sponsors	Projects
<b>44th Annual Ichimura Industrial Awards — Contribution Prize</b>	The New Technology Development Foundation	Development of LP Steel Plate Manufacturing Technology that Contributes to Reduction of Environmental Impact of Steel Structures (JFE Steel)
<b>58th Okochi Memorial Prize</b>	Okochi Memorial Foundation	Ultra-Low Spatter Positive Polarity Carbonic Acid Gas Arc Welding Technology (JFE Steel)
<b>38th Naoji Iwatani Memorial Prize</b>	Naoji Iwatani Memorial Foundation	Development of an Iron Ore Sintering Process Using Hydrocarbon Gas (JFE Steel)
<b>4th Monodzukuri Nippon Grand Award Minister of Economy, Trade and Industry's Prize</b>	Ministry of Economy, Trade and Industry, et al.	Improved Performance of Steel Plates for Automobiles through Nano Level Surface Modification (JFE Steel)
<b>4th Monodzukuri Nippon Grand Award Prime Minister's Commendation</b>	Ministry of Economy, Trade and Industry, et al.	Long-Term Corrosion-Prevention Construction System for Jacket-Type Piers (Technology to Significantly Reduce 100-Year Maintenance Costs) (JFE Engineering, et al.)
<b>37th Environmental Devices Awards</b>	The Japan Society of Industrial Machinery Manufacturers	"Gas Clean DX" Exhaust Gas Purification Technology Using Activated Charcoal (JFE Engineering)
<b>31st Engineering Award</b>	Engineering Advancement Association of Japan	Singapore SkyPark Project Team (JFE Engineering, et al.)
<b>Fiscal 2011 Good Design Award</b>	Japan Institute of Design Promotion (JDP)	RAPIDAS Rapid Charging System for Electric Vehicles (JFE Engineering, et al.)
<b>4th Monodzukuri Nippon Grand Award Prime Minister's Commendation</b>	Ministry of Economy, Trade and Industry, et al.	Maritime-Related Meritorious Services (Development of Energy-Conserving Bow that Transformed the Shape of Large Vessels Worldwide) (Koichiro Matsumoto, Universal Shipbuilding Corporation)

### Third-party Comments



Yoshinao Kozuma  
Professor,  
Faculty of Economics  
Sophia University

The JFE Group, which celebrated its 10th anniversary this year, is striving to establish a corporate structure for sustainable growth while contributing to society through its business activities. Toward this end, the company has announced four top-priority measures: "Strengthen CSR and Corporate Governance," "Strengthen Environmental Management," "Diversify Human Resources on a Global Scale" and "Improve Financial Position and Return Profits to Shareholders." Having evaluated the CSR activities of the JFE Group in light of these four measures, I would like to offer my thoughts herein.

#### 1. Thorough Compliance

The JFE Group had a history of struggling with Antimonopoly Law violations on an almost annual basis. To put an end to this, it utilized the PDCA cycle to establish extensive preventive measures, including commitments declared by top management, compliance training sessions held repeatedly, disciplinary action against Antimonopoly Law violations, prohibition of employee contact with competitors, establishment of a corporate ethics hotline and surveys of employee awareness. As a result, unfortunate incidents have not occurred for several years, indicating that the measures have been effective.

In addition, the Fourth Medium-Term Business Plan announced in April 2012 made clear that JFE will raise its overseas investment ratio to about 50%. The prevention of bribery and similar acts is an important issue for global CSR. I look forward to the JFE Group disclosing the status of its training programs for corruption prevention and similar measures.

#### 2. Thorough Environmental Management

As seen in the global warming countermeasures of JFE's "Three Ecos," environmental management is being carried out not only in business but also across the Group's value chain through the development of eco-friendly products and overseas transfers of environmental technology. As such, energy and resource conservation technologies of JFE are helping to reduce global environmental loads. While environ-

mental management represents the most advanced of the four key measures mentioned above, it is my hope that, in order to tie these approaches to improved financial performance, JFE will further integrate its CSR mindset and business strategy, and will further elevate the values it shares with society.

#### 3. Promotion of Diversity

The establishment of the Diversity Promotion Sec. within JFE Steel in January 2012 marked the launch of full-scale efforts in a relatively new area of focus for the JFE Group. Although equal-employment opportunities and systems for work-life balance have been enhanced within the Group, especially JFE Steel, it appears that Group-wide promulgation of such efforts and further action regarding information disclosure will become new goals for JFE. In addition, the ratio of employees with disabilities at Universal Shipbuilding Corporation, which I pointed out last year, exceeded the statutory employment rate upon the establishment of a special subsidiary in April 2011, marking a step forward in the Group-wide employment of persons with disabilities.

#### 4. Measures for Shareholders

Noteworthy among JFE's measures for shareholders are the plant tours being held on a nationwide scale. Tours of not only steelworks and shipyards but also plants for recycling consumer appliances and PET bottles are being offered, allowing citizens to get a bird's-eye view of the JFE Group's businesses. Such programs, as well as IR activities for institutional investors and securities analysts, are important means of communication, so I am hopeful that JFE will continue to organize and enhance them, including through expanded implementation.

The JFE Group's sustainability reports for this fiscal year, in keeping with the previous year's CSR Report structure, consist of a Highlight Version, Detailed Version and Compilation of Environmental Data, creating an increased sense of integration. Going forward, it is my hope that the company will continue to raise the quality of its information-disclosure initiatives.

We received many valuable responses to last fiscal year's CSR report (environmental and social report). In this section we introduce some of the opinions and thoughts of our readers.

### Opinions

I felt that the content was thorough and edited for easy understanding. However, the sheer volume of material was challenging to read through, so a digest version would be appreciated.

Aside from efforts to reduce the environmental impact of your manufacturing activities, I would like you to give more thought to iron as a valuable resource by developing non-rusting (or rust-resistant) iron.

I read the report with great interest, but I wasn't able to get a clear image of CYCLE TREE. A little more detail would be nice.

I hope the company will continue its support for reconstruction [in disaster-struck northeastern Japan]. I'm interested to see whether the report will reduce its page count, or will feature deeper content, once reconstruction aid ends.

### From the Editing Department

We received many opinions concerning readability and comprehensibility. For enhanced readability, this year we prepared highlight and detailed versions of the report, as well as Compilation of Environmental Data. The Highlight Version provides simple explanations of JFE's concepts and activities regarding CSR, while more detailed information is available in the Detailed Version and Compilation of Environmental Data.

Iron is a valuable and fully recyclable resource. The steelworks of JFE Steel recycle all scrap generated during manufacturing, and also reuse scrap generated from our social activities. Used plastic, PET bottles and other wastes also are reused effectively as resources. Please see pages 5-6 in the Highlight Version, 9-10 in the Detailed Version and 2-3 in the Compilation of Environmental Data.

CYCLE TREE is a fully automated, multistory parking system that speedily stores a large number of bicycles in a compact space. Our current lineup includes aboveground, underground, tree-type, and horizontal systems. For details, please see the website below, or visit our showroom to see examples of the machinery and how it works.

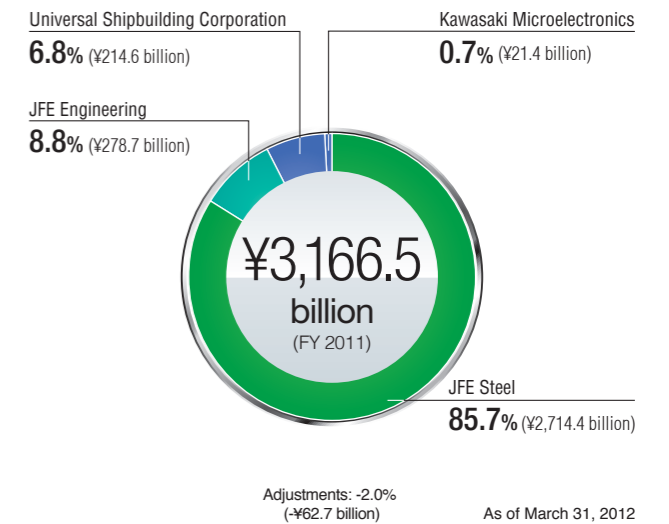
**Reference: CYCLE TREE Multistory Parking System**  
[www.jfe-eng.co.jp/products/machine/logistics/lo09.html](http://www.jfe-eng.co.jp/products/machine/logistics/lo09.html) (Japanese only)

Reconstruction assistance in the quake-affected region remains a top priority for us. Efforts have shifted from infrastructure recovery immediately following the earthquake to support for reconstruction. For details, please see pages 29-30 of the Highlight Version.

**Company Name:** JFE Holdings, Inc.  
**Head office:** 2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011  
**Tel:** +81-3-3597-4321  
**Established:** September 27, 2002  
**Capital:** 147.1 billion yen  
**Shareholders:** 309,395  
**URL** www.jfe-holdings.co.jp/en

JFE Holdings performs the key roles of strategic planning, risk management and external accountability as the holding company of the JFE Group, enabling Group companies to devote their full attention to the enhancement of competitiveness and profitability.

**Consolidated Sales Breakdown**



**Steel Business**

**JFE Steel Corporation**  
 Head Office: Chiyoda-ku, Tokyo  
**Sales:** ¥2,714.4 billion  
**Employees:** 42,571

JFE Steel is one of the world's leading integrated steel producers. A strong international player with a sophisticated production system consisting of two major steelworks, one each in eastern and western Japan, JFE Steel engages in the production and sale of unique "Only One" and market-leading "Number One" branded products, plus a wide range of other added-value products that incorporate the company's cutting-edge technologies and development know-how.

**Engineering Business**

**JFE Engineering Corporation**  
 Head Office: Chiyoda-ku, Tokyo  
 Yokohama Head Office: Yokohama, Kanagawa Prefecture  
**Sales:** ¥278.7 billion  
**Employees:** 7,433

JFE Engineering technologies enhance the effective use of resources for clean energy. In addition to its core businesses in environmental infrastructure and energy, JFE Engineering offers specialized expertise in the fields of industrial machinery and steel structures, such as bridges.

**Shipbuilding Business**

**Universal Shipbuilding Corporation**  
 Head Office: Kawasaki  
**Sales:** ¥214.6 billion  
**Employees:** 3,647

Universal Shipbuilding, with its "fleet" of five shipyards and one technical research center, has become a leader in the construction and repair of large merchant ships, including tankers, special vessels such as AHTSVs, minesweepers and icebreakers.



**JFE Holdings, Inc.**

2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011 Japan

<http://www.jfe-holdings.co.jp/en>

