

2008

JFE GROUP

ENVIRONMENTAL SUSTAINABILITY REPORT



Message from Senior Management

Coordinating Corporate Growth, Environmental Conservation



JFE Holdings, Inc.
Member of the Board
Senior Vice President

Eiji Hayashida

The JFE group is dedicated to actualizing through corporate actions our corporate standards of business conduct as well as environmental philosophy and policy that emphasize coexistence with and enhancement of the global environment.

JFE is fully aware that we are a high volume generator of greenhouse gas emissions. We thoroughly promote energy conservation, actively invest in the introduction of new technology, promote conversion from chemical substances with a high global warming potential, reduce our greenhouse gas emissions, and fulfill the reduction targets of the Voluntary Action Program proposed by Nippon Keidanren (Japan Business Federation). Moreover, we promote appropriate

responses to the various risks brought about by changes in climate. We are also contributing to reduction of greenhouse gas emissions worldwide by supplying the JFE Group's cutting-edge technology.

In addition to greenhouse gases, our business activities generate environmental loads such as wastewater, exhaust gases, and chemical substances. The JFE Group strives to thoroughly reduce these loads and protect the global environment.

The JFE Group has developed and provided a large quantity of environment-conscious products and technology, and we shall continue to promote these activities even more intensely while playing our part in the protection of the global environment.

Environmental Philosophy

The JFE Group considers the improvement of the global environment to be of utmost importance for management, and promotes business operations in harmony with the environment to create a prosperous society.

Environmental Policy

1. To reduce environmental influence in 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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Editorial Policy

"JFE Group Environmental Sustainability Report 2008" states environmental protection activities in the year ended March 2008, as well as results of those activities in the business operations of JFE Holdings, Inc., which is the holding company of the JFE Group, and its operating companies. This Report was edited/prepared in accordance with "Guidelines for Environmental Reports (FY 2007 ed.)" issued by Japan's Ministry of the

Environment (MOE) and "Sustainability Reporting Guidelines 2006". Please note that this Report is disclosed solely on the website. If you need (a) brochure(s), please print out this document.

*For further company information, business descriptions, product information, and operation facilities, etc., please refer to JFE GROUP BUSINESS REPORT 2008 or our website at <http://www.jfe-holdings.co.jp/en/index.html>

Priority Environmental Targets and Results

Priority Environmental Targets and Results

(Year ended / ending March 31)

	2008 Priority Environmental Targets	2008 Results	2009 Priority Environmental Targets
JFE Steel	Promote measures to prevent global warming <ul style="list-style-type: none"> Promote measures to prevent global warming based on Japan Iron and Steel Federation's Voluntary Action Program (Achieve a 10% reduction in energy consumption amount during the period from the year ending March 2009 to the year ending March 2013, compared to the year ended March 1991 level, and another 1.5% reduction (additional target) through effective usage of waste plastics, etc.) 	<ul style="list-style-type: none"> Approximate 19% reduction of energy consumption in basic unit compared to year ended March 1991 CDM implementation (The Philippines: approved by the UN in May 2007) Commenced shaft furnace construction Approved CDQ addition plan Regenerative burner addition Oxygen plant efficiency upgrade 	Promote measures to prevent global warming <ul style="list-style-type: none"> Promoting measures to prevent global warming in line with the Voluntary Action Program of the Japan Iron and Steel Federation (JISF) (Compared to 1990, we plan to achieve a 10% decrease in energy consumption for the period from the year ending in March 2009 to 2013)
	Promote byproduct recycling <ul style="list-style-type: none"> Continuously look at developing and applying technologies for recycling dust and slag Reduce landfill of slag by 20% 	<ul style="list-style-type: none"> Introduced and currently constructing dezincking and recycling equipment for dust containing zinc to the Fukuyama region Implementing modifications and equipment upgrades to Kurashiki region combustion incinerators and roasting furnaces for recycling oil sludge Oil sludge recycled: 5,000 tons (20% decrease in sludge landfill) 	Promote byproduct recycling <ul style="list-style-type: none"> Continue development of recycling technology for dust and sludge and implementation of actual equipment Improve waste material management Enact a group-wide waste material collection system Introduce electronic manifest group-wide Over 80% computerization
	Continuously strive to reduce environmental risks <ul style="list-style-type: none"> Comply with new regulations Promote voluntary environmental conservation activities 	<ul style="list-style-type: none"> Complied with new laws and regulations Reinforcement and new installation of wastewater treatment equipment Promoted voluntary environmental conservation activities Reinforcement of surveillance sensors Continued independent control for VOC reduction 	Continuously strive to reduce environmental risk <ul style="list-style-type: none"> Comply with new regulations Promote voluntary environmental conservation activities
JFE Engineering	Promote energy-saving activities in production divisions Tsurumi Engineering & Manufacturing Center: 11% reduction compared to the year ended March 1998 level Shimizu Works: 17% reduction compared to the year ended March 1998 level Tsu Works: 11% reduction compared to the year ended March 1998 level At Tsurumi, the target is calculated based on electricity usage per hour of operation At Shimizu and Tsu, the target is calculated based on electricity usage per unit volume of production	<ul style="list-style-type: none"> Tsurumi and Shimizu met targets, Tsu did not Tsurumi Engineering and Manufacturing Center : achieved a reduction of 11% compared to the year ended March 1998 Shimizu Works : achieved a reduction of 37% compared to the year ended March 1998 Tsu Works : generated an increase of 17% compared to the year ended March 1998 	Promote energy-saving activities in production divisions Tsurumi Engineering and Manufacturing Center: achieves a reduction of 12% compared to the year ended March 1998 Shimizu Works : achieves a reduction of 40% compared to the year ended March 1998 Tsu Works : limit the increase to a maximum of 15% compared to the year ended March 1998 *An increase compared to year ended March 1998 is anticipated for Tsu Works due to an increased usage of high current welding machinery
	Promote reduction of construction site waste <ul style="list-style-type: none"> Reduce final disposal rate to 35% or less in three years ended March 2008 Note : Final disposal rate = (total waste volume - (volume recycled + volume reduced)) / total waste volume	<ul style="list-style-type: none"> Achieved target with a final disposal rate of 19.0% for the year ended March 2008 (Generated 2,020 tons) 	Promote reduction of construction site waste <ul style="list-style-type: none"> A recycle rate of over 73%
	Promote resource-saving and environmentally friendly office activities <ul style="list-style-type: none"> 6% increase in green procurement rate of office supplies compared to the year ended March 2005 level 	<ul style="list-style-type: none"> Tsurumi, Shimizu, and Tsu did not meet targets The following results were caused by an inability to purchase copy paper under green purchasing standards due to the incident concerning false labeling of recycled paper Tsurumi Engineering and Manufacturing Center : 4.0% increase Shimizu Works: 13.1% decrease Tsu Works: 4.1% decrease 	Promote resource-saving and environmentally friendly office activities <ul style="list-style-type: none"> Percentage of money used for green purchasing of office supplies Tsurumi Engineering and manufacturing Center : over 75% Shimizu Works : over 90% Tsu Works : over 93%
Kawasaki Microelectronics	Promote measures to prevent global warming <ul style="list-style-type: none"> Energy saving rate: 1% or higher Complete alternatives for C2F6 and commence specific reduction measures aiming at 10% reduction of PFC*1 emissions compared to the year ended March 1996 level 	<ul style="list-style-type: none"> Achieved a 2.3% energy conservation rate Plans to completely substitute alternatives for C2F6 (PFC gas) and begin reduction of emissions were put on hold due to a suspension of the supply of alternative gases 	Promote measures to prevent global warming <ul style="list-style-type: none"> Achieve more than 1% energy saving rate Complete new C2F6 gas substitute experiments and will begin reductions in early 2009
	Reduce consumption of chemical substances <ul style="list-style-type: none"> Reduce consumption of the notification substance 	<ul style="list-style-type: none"> Accomplished an additional decrease in the usage amount of our sole substance targeted for notification (hydrogen fluoride and its water-soluble salts) 	Reduce consumption of chemical substances <ul style="list-style-type: none"> Reduce usage amount of notification substances Reduce the amount of types of substances used
	Reduce industrial waste <ul style="list-style-type: none"> Reduce wastewater treatment-origin dehydrated sludge by 10% 	<ul style="list-style-type: none"> Achieved a reduction of over 10% for dehydrated sludge 	Reduce industrial waste <ul style="list-style-type: none"> Achieve recycling rate of over 50% for the dehydrated sludge from wastewater treatment

*1 PFC: Perfluorocarbon

JFE Steel's Activities to Prevent Global Warming

— Stepping into the first fiscal year of the Kyoto Protocol —

Message from Senior Management

JFE Steel Corporation
Senior Vice President

Takashi Sekita



We have engaged in a variety of activities to date in order to adhere to the Voluntary Action Program of the Japan Iron and Steel Federation (JISF). Entering the first fiscal year of the first commitment period of the Kyoto Protocol, we will use technological development and facility investments to focus to the greatest degree possible on this arena, in line with our reduction of energy consumption (and CO₂ emissions). Also, we will aim to fully accomplish the JISF Voluntary Action Program by using the Kyoto Mechanisms as a complementary measure.

Furthermore, we will do our part to assist in the reduction of CO₂ emissions through supplying high performance steel products such as high tensile steel sheets, which contribute to improvements in fuel consumption for automobiles. And on the international stage, by converting our steel production process to employ energy saving technology that meets the highest global standards, we will contribute to the reduction of CO₂ on a global scale.

Efforts of Iron Industry (The JISF's Voluntary Action Program)

Energy consumption for the year ended March 2007 was down 5.2% from the year ended March 1991. As a supplementary measure, a contract has been made under the Kyoto Mechanisms for the purchase of 44 million tons by the total of the Japan Iron and Steel Federation (JISF).

※The JISF's Voluntary Action Program

We plan a 10% reduction in average energy consumption (predicated on the production of 100 million tons of crude steel) over the year ending March 2009 to the year ending March 2013 compared to the year ended March 1991. And, as an additional task, we plan to establish a collection system for waste plastic, consuming 1 million tons.

**Transition in Energy Consumption
by the Iron and Steel Industry in Japan**

Source: The Japan Iron and Steel Federation

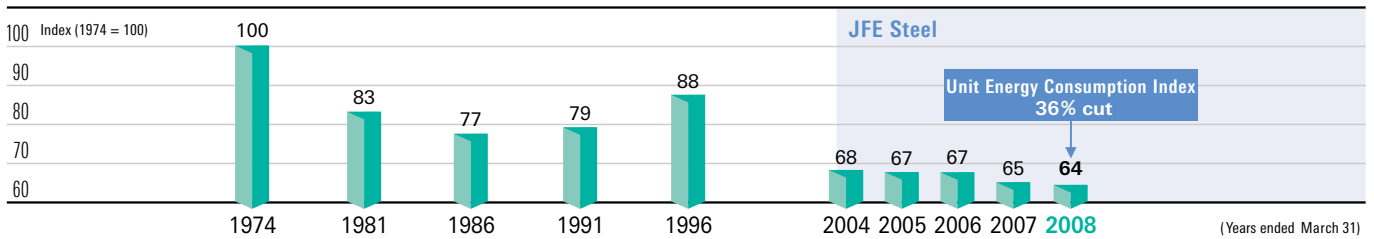




Energy Saving Activities

Since the 1970s, we have worked towards CO₂ reduction through technological development and the introduction of a variety of different kinds of equipment. For example, we use gases generated from various processes for fuel and electric power required in our steelworks and we also assiduously collect and efficiently use emission gasses and exhaust heat. Thanks to these efforts, we have achieved a 36% reduction in unit energy from 1973 to the present, achieving world-class efficiency in energy consumption.

Transition of Unit Energy Consumption Index at JFE Steel

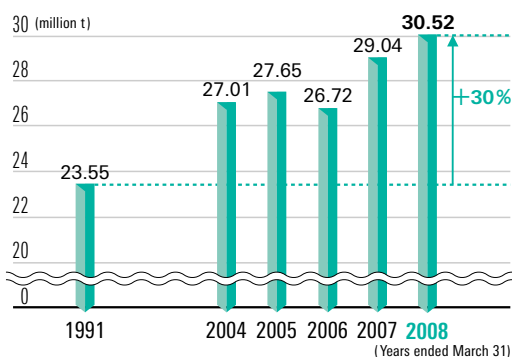


Period	Key Activities
1974-1990	Introduction of energy saving equipment <ul style="list-style-type: none"> Reduction of reheating furnace fuel Large-scale waste heat recovery equipment BF top pressure recovery turbine (TRT), sintering waste heat recovery, etc. Process continuation Continuous casting line, continuous annealing line, etc.
1991-2007	Further promotion of energy saving <ul style="list-style-type: none"> Waste plastics feeding into BF Introduction of regenerative burner Endless rolling City gas blowing technology for BF High efficiency oxygen plant
2008-	Global warming prevention measures by energy saving <ul style="list-style-type: none"> New construction of shaft furnace (operation start scheduled in August 2008) Augmentation of CDO (operation start scheduled in March 2009) Broader introduction of regenerative burner Augmentation of high efficiency oxygen plant BOF gas sensible heat recovery

Achievements in Crude Steel Production for the Year Ended March 2008

We have been increasing production in response to stronger demand for highly functional steel products from customers mainly in the automobile, electric appliance, and shipbuilding industries. As a result, compared to the year ended March 1991 level, crude steel production had increased 30% by the year ended March 2008.

Transition of Crude Steel Production at JFE Steel



Crude steel production in comparison to the year ended March 1991

30%
increase

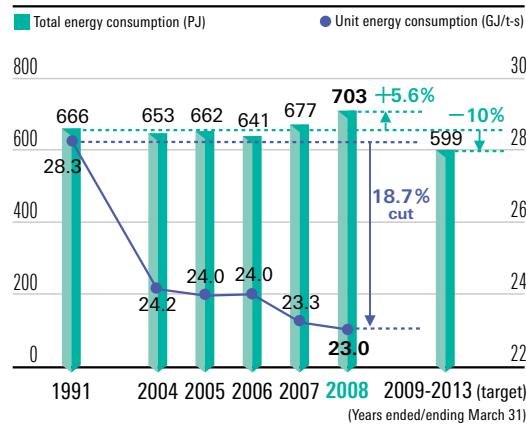


CDQ

Unit energy consumption in comparison to the year ended March 1991

18.7% cut

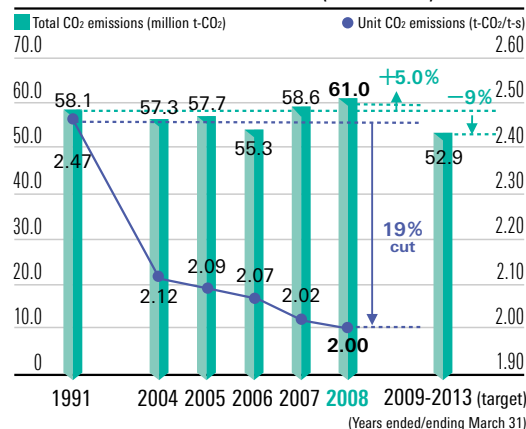
Transition of Total Energy Consumption and Unit Energy Consumption at JFE Steel



Unit CO₂ emissions in comparison to the year ended March 1991

19.0% cut

Transition of Total Energy Origin CO₂ Emissions and Unit CO₂ Emissions at JFE Steel (Estimation)



Achievements in Energy Consumption Amount and Unit Energy for the Year Ended March 2008

Though crude steel production increased 30% in the year ended March 2008 when compared to the year ended March 1991, we were able to keep the increase in energy consumption to 5.6%. Additional efforts to conserve energy through technological development and equipment investment resulted in dramatic streamlining, with an 18.7% reduction in the amount of energy consumption required to produce one ton of crude steel (unit energy).

Achievements in CO₂ Emissions and Unit CO₂ Emissions for the Year Ended March 2008

Though crude steel production had increased 30% by the year ended March 2008 when compared to the year ended March 1991, we were able to keep the increase in CO₂ emissions to 5.0%. And, using the most sophisticated equipment and technology in the world resulted in a 19% reduction in the amount of CO₂ emissions involved in producing one ton of crude steel (unit CO₂ emissions).

※ The CO₂ emissions for each fiscal year presented here are different from the numerical values given in the business report for the previous fiscal year (year ended March 2008). The reasons for the change in values and the difference of this report from the CO₂ emission levels officially announced in the Law Concerning the Promotion of the Measures to Cope with Global Warming are presented on page10.

Future Plans to Reduce CO₂ Emissions

To date, we have consistently carried out improvements in the efficiency of operations and investment for energy conservation. In the current Medium-Term Business Plan (from the year ended March 2007 to the year ending March 2009) as well, we are promoting the investment of 100 billion yen for CO₂ reduction and energy conservation. We expect to achieve a CO₂ reduction of 4.2 million tons per year through this investment.

In addition to these improvements in operation and equipment efficiency, we are involved in other efforts to reduce CO₂ emissions in the future, such as the implementation of projects to develop innovative steel production methods.

We are also using the Kyoto Mechanisms as a

supplementary measure for achieving the Voluntary Action Program of the Japan Iron and Steel Federation (the entire group of companies in the JISF generated a total purchase agreement value of 44 million tons for a five year period from 2008 to 2012). Also, JFE Steel is implementing CDM*¹ for PSC*² (registration with the United Nations was completed in May 2007), and is currently constructing waste heat recovery equipment for sintering machines.

*¹ CDM (Clean Development Mechanism)

This is a system introduced in the Kyoto Protocol wherein developed nations supply developing nations with technology and funds to reduce CO₂ emissions, and in return the supplying country can list the reductions in their own target achievement records.

*² PSC (Philippine Sinter Corporation)

A project involving factories that manufacture sintered ore as raw material for steel production

CO₂ emissions
reduction through
investment

4.2
million tons
cut

CO₂ Reduction
through Technology



Reduction of
approx. 4.2 million tons per year

Improving efficiency of operation

- Installing a shaft furnace: restricts the amount of CO₂ emissions by liquefying 500 thousand tons of scrap per year (operation planned to start in August 2008)
- Lowering the reducing agent rate for blast furnaces: infusions of city gas, infusions of pulverized container and packaging plastic (capacity: 8,000 tons per year), etc.

Super streamlining equipment (energy conservation)

- CDQ: Power generation using sensible heat for coke ovens
Kurashiki CDQ: operation planned to start in March 2009
Fukuyama CDQ: operation planned to start in May 2010
- Regenerative burners: Burners with better thermal efficiency (16 additional burners)
- Oxygen plant upgrade: upgrading to state of the art, high efficiency plants
Chiba No.14: Operation started September 2007
Kurashiki No.12: Operation planned to start September 2009

Research and Development for the Future

- Projects to develop innovative steel production techniques
Technology to effectively utilize unused waste heat
Technology to control reactions in hydrogen reduction furnaces
- Technology for capture and storage of CO₂

Kyoto Mechanisms Considerations

Implementing CDM (Clean Development Mechanism)

- PSC (Philippine Sinter Corp.) waste heat recovery from sintering
Registration with the United Nations was completed in May 2007



We are currently constructing a shaft furnace (height from ground= 50 meters)



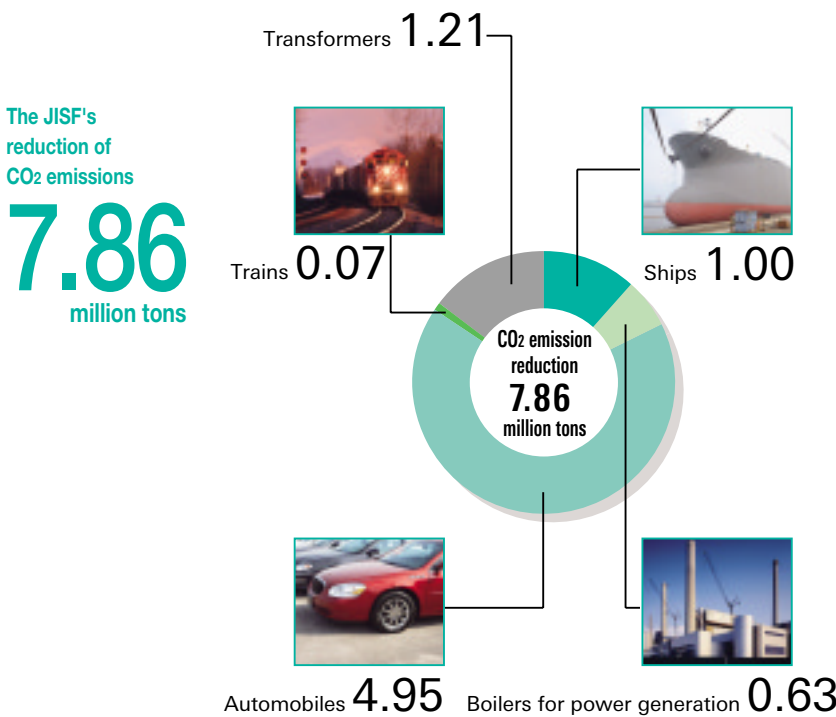
State of the art regenerative burner



At PSC we are constructing equipment for waste heat recovery from sintering

Contributing to the Reduction of CO₂ through Our Products

CO₂ Emission Reduction Effect at the Stage of Using Steel Products (As of the year ended March 2007)



Source: The Japan Iron and Steel Federation

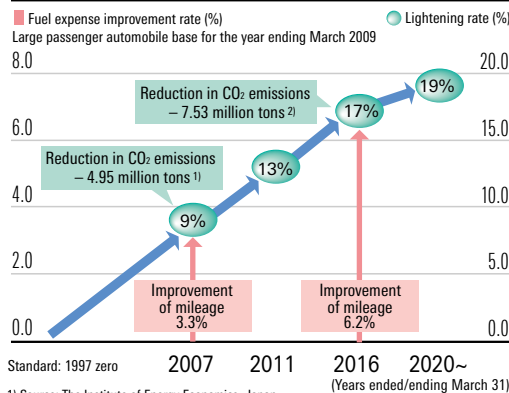
We actively promote the development of high performance steel that is lightweight, highly efficient, and long lived through superior technological prowess. For example, because automobiles and ships can be made stronger and lighter with high tensile steel sheets (HITEN), it becomes possible to increase safety and improve fuel efficiency. Also, using high performance electrical steel sheets enables a high level of efficiency in electrical machinery and transformers.

Thanks to this high performance steel, the calculated level of CO₂ emission reduction for the year ended March 2007 was 7.86 million tons for the entire group of companies in the JISF.



We produce high performance steel that is lightweight, highly efficient, and long lived.

Automobile weight reduction and economical mileage with high tensile steel sheets (HITEN)



Because high tensile steel sheets (HITEN) both strengthen and lighten automobiles, they are used in the manufacture of many different parts.



RORO vessel that enables efficient transportation of steel



An all-weather berth that allows cargo loading even in bad conditions

Energy Saving Measures at the Transportation Division

A modal shift is also taking place in the transportation of steel products, with a switch to the use of the more environmentally friendly shipping and rail transport. JFE Steel has achieved a modal shift of 94%.

The amount of CO₂ emissions for deliveries in the year ended March 2008 was approximately 450,000 tons. Corresponding with an increase in crude steel

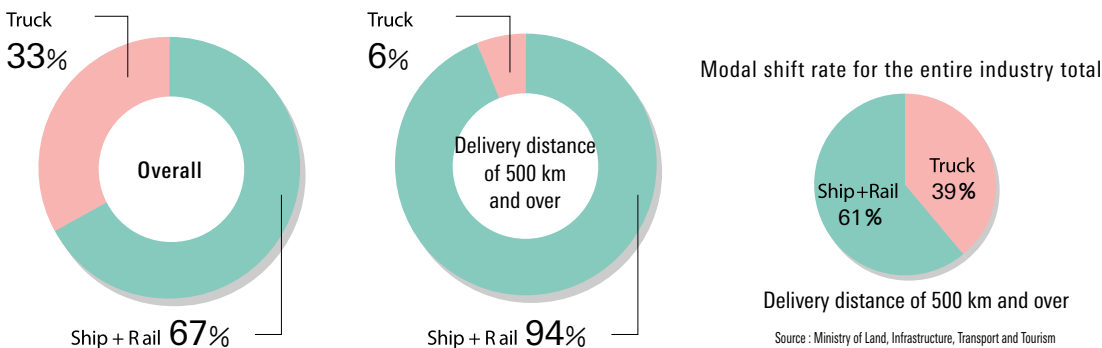
production, the emissions amount increased approximately 5% compared to the previous fiscal year (ended in March 2008). However, we are continuing streamlined usage of operating cars and ships.

Note: CO₂ emissions amount for the delivery division in year ended March 2007 – 427 thousand tons

Modal shift rate

94%

JFE Steel modal shift rate



Minister of the Environment, Ichiro Kamoshita – inspection of East Japan Works in Chiba

On April 10, 2008, Minister of the Environment, Ichiro Kamoshita, visited the East Japan Works (Chiba). After viewing the Environmental Abnormality Prevention System at the Visitors' Center, he inspected the No.6 Blast Furnace and No.3 Hot Strip Mill.

After the tour was finished, Minister Kamoshita commented, "I experienced firsthand the wealth of technology that has been accumulated to support the industrial base of Japan. And I can see that efforts are being made with measures to counter global warming and a great deal of energy is being focused on CO₂ reduction measures. Please keep up the good work in the areas of innovation and technological advancement to prevent global warming."

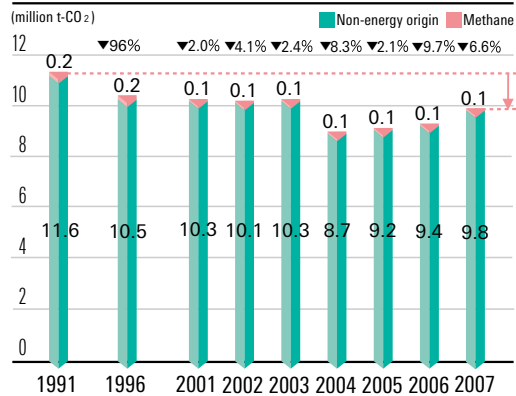


Non-energy Origin CO₂ Emissions

Limestone and dolomite used in BF, converters and the like produce non-energy origin CO₂ emissions. In the process of manufacturing coke, N₂O is emitted by fuel usage or from water treatment equipment and similar sources.

The total preliminary estimate of the CO₂ equivalent of non-energy origin greenhouse gas emissions emitted by JFE Steel reached approximately 2.2 million tons in the year ended March 2008.

Transition of Non-energy Origin GHG Emissions by the Iron and Steel Industry in Japan



Source: The Japan Iron and Steel Federation (Years ended March 31)



<Explanation> Changes in the amount of JFE Steel's CO₂ emissions in the year ended March 2007

(Page 75 annotation in the JFE Group "Business Report 2008")

Regarding differences in the amount of CO₂ emissions in the year ended March 2008 Environmental Sustainability Report and this fiscal year's Environmental Sustainability Report

The amount of CO₂ emissions is calculated by multiplying the amount of energy used for each energy type (coal, electricity, byproduct gases, etc.) by its CO₂ coefficient. Because the coefficient values were completely revised, our energy origin CO₂ emissions values have also changed for this fiscal year.

As a result, the emissions figures for year ended March 2007 reported in the Environmental Report for the year ended March 2008 was 55.8 million tons and the figure reported in the Environmental Sustainability Report for this year is 58.6 million tons.

(Note 1) Reasons for the revision of energy conversion coefficients: revision of electric energy conversion coefficient and the standard thermal output amount in the Ministry of Economy, Trade and Industry's General Energy Statistics (conducted every five years)

(Note 2) Reasons for the revision of CO₂ emissions coefficients: in the National Greenhouse Gas Inventory Report of Japan (May 2007), which was compiled under the supervision of the Ministry of the Environment and reported to the UN, the CO₂ emissions coefficients for some fuels were revised and reviewed from the benchmark year. The electric power CO₂ emissions coefficient was also revised from the benchmark year to fit the new figures.

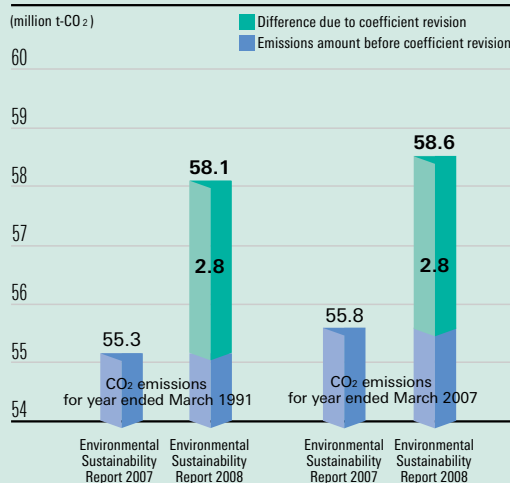
Regarding differences of the figures between the Environmental Sustainability Report and Global Warming Measures Law

The CO₂ emissions amount officially reported in this Environmental Sustainability Report handles energy-origin CO₂ calculated under Japan Iron and Steel Federation's Voluntary Action Program.

However, according to the Law Concerning the Promotion of the Measures to Cope with Global Warming (Global Warming Measures Law), the reporting of all greenhouse gases stipulated in the Kyoto Protocol is required. This is why there is a difference between the two figures. The actual figures for the year ended March 2007 are shown in the graph to the right.

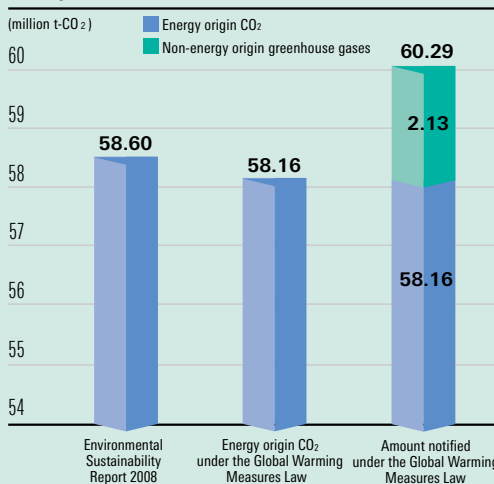
In addition to CO₂, JFE Steel strives to reduce all greenhouse gases.

Differences in CO₂ emissions amount figures



Energy origin usage after the change in the coefficients used in converting data to CO₂ values
 *The energy amount is determined by the energy conversion coefficient (Note 1)
 *The CO₂ amount is determined by the CO₂ conversion coefficient (Note 2)

Differences in CO₂ emissions amount figures from year ended March 2007



1) Because under the Global Warming Measures Law data is totaled for each corporation (company), CO₂ emissions from Kyodo Oxygen are not included
 2) Non-energy origin CO₂: generated from heating limestone and dolomite
 CaCO₃ (limestone) → heat → CaO (calcium oxide)
 3) Generated by combustion of greenhouse gases such as methane and nitrous oxide in reheating furnaces and neutralizing factory wastewater (bacteria treatment)

International Contribution by Providing Environment /Energy Technologies

International Activities to Prevent Global Warming

Using energy conserving technology of the highest international standards, we are involved in the following international actions in the fight against global warming.

- Japan and China held the Japan China Steel Industries Conference on Exchange of Advanced Technologies on Environmental Preservation and Energy Saving. In December 2007, prominent experts on Japanese steel, including JFE Steel, conducted diagnoses regarding environmental preservation and energy saving at three steelworks in China.

- The APP ^{*1} steel task force (chaired in Japan) is promoting CO₂ reduction in seven countries through environmental preservation and energy conservation.

- IISI ^{*2} provides a framework for CO₂ reduction by introducing superior modern operational technology and energy conservation technology in steel industry centers across the world in the short term, and

promoting the development of innovative steel production technology in the long term.

Along with other major Japanese steel companies, JFE Steel is asserting to APP and IISI the effectiveness of the Sectoral Approach, a powerful strategy for reducing CO₂ emissions on a global scale from 2013 onwards (Post-Kyoto Protocol).

^{*1} APP: Asia Pacific Partnership (an Asian-Pacific partnership concerned with clean development and weather) was launched in July 2005 with the participation of Australia, China, India, the Republic of Korea, and the United States. (From October 2007, Canada, the seventh nation, will also take part.) The goal of APP is to take on issues such as climate fluctuation and energy security. It set eight target areas, including steel, and established a task force for each field, composed of members from the public and private sectors. It is currently conducting activities in each field.

^{*2} IISI: The International Iron & Steel Institute is composed of approximately 180 leading steel manufacturing corporations in territories including Japan, the USA, the EU, Russia, India, Brazil, and Korea. It covers almost all of the world's crude steel production needs. In their October 2007 board meeting, they decided to use the Sectoral Approach internationally.

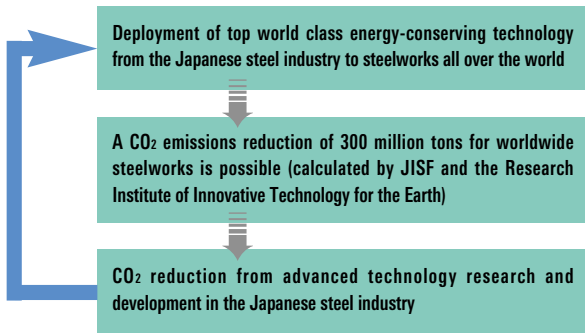


An energy conservation diagnosis at Taiyuan Iron & Steel in China



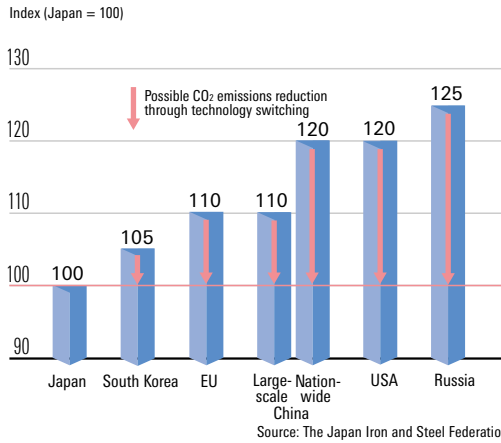
APP meeting in Busan, Korea

The Future of Reducing CO₂ through Steel and the Sectoral Approach (see Note below)



Note : The Sectoral Approach is a CO₂ reduction method that applies efficiency indices (example: unit CO₂ per ton of crude steel) across the entire world. The indices are categorized by each sector, such as steel or electrical power. Because the Approach is based on efficiency indices, it is easy for developing countries such as China and India to participate. It is a reliable method of reducing CO₂ backed by technology.

International Comparison of the Unit Energy Consumption of Integrated Steelworks

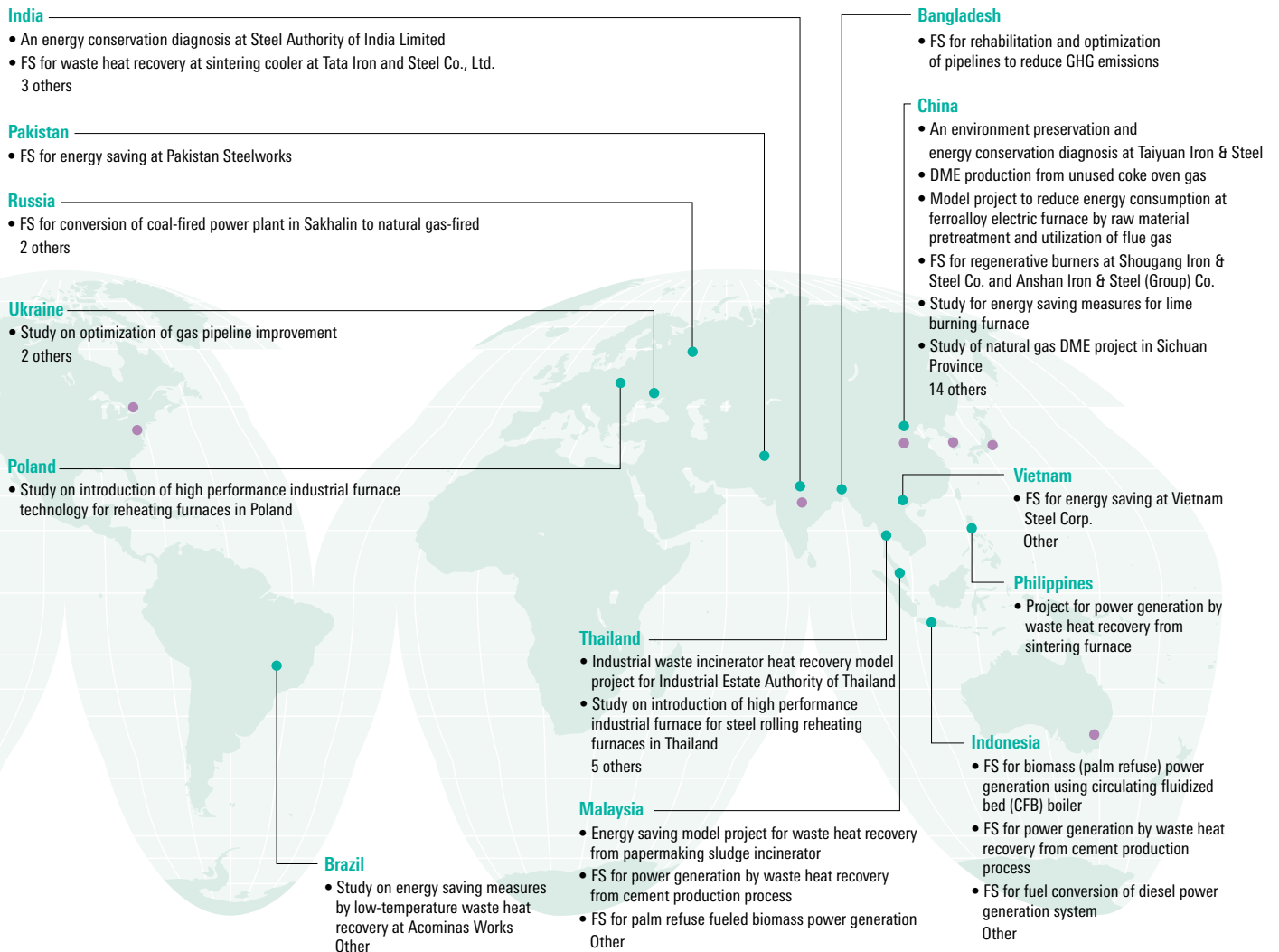


Projects outside Japan

Based on the environmental preservation, energy conservation, and CO₂ reduction technology achieved by JFE through ongoing technological development, we are conducting numerous projects to fight global

warming and make economical advancement compatible with environmental preservation in developing countries. Also, we are contributing to the international stage through technological conversions.

World Map of International Cooperation Projects by the JFE Group



Environmental Management System

Construction and Operation of Environmental Management System

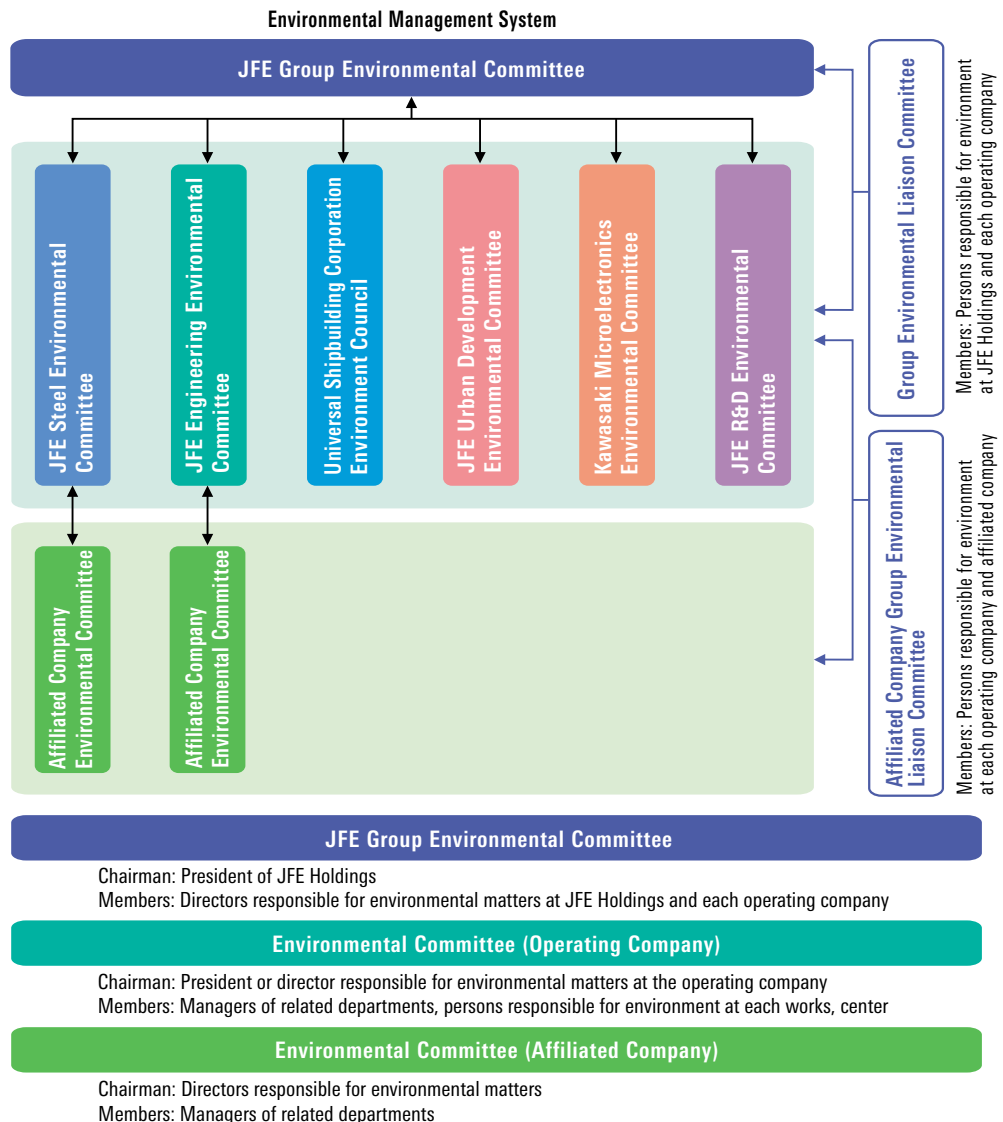
Under the JFE Group CSR Council, the JFE Group has set up not only the Group Environmental Committee chaired by the President of JFE Holdings, but also an Environmental Committee in each of the Group's operating companies and affiliated companies. With this multi-tiered committee system, JFE has been dealing with environment-related issues such as setting objectives for environmental protection activities, progress checks of those activities, and evaluation of environmental performance for the whole group.

JFE has also established the Group Environmental Liaison Committee made up of persons responsible for environmental matters at JFE Holdings and the five operating companies in order to spread environmental

activities within the Group evenly and improve the level of activities. From 2008, with under a new system by which Universal Shipbuilding Corporation has been added to the five operating companies, JFE aims to further improve the Environment Management system.



JFE Steel Group Companies Environmental Liaison Committee



Promotion to Receive ISO 14001

Each company in the JFE Group has been aiming to receive ISO 14001 certification in order to promote voluntary and continuous environmental activities. Three operating companies with production facilities have all received ISO 14001 certification, either for individual works or at the whole company level. In March 2008, Steel Research Laboratory of JFE Steel received ISO 14001 certification. Many affiliates of the operating companies have also been aiming to receive the certification. The JFE Group will continuously extend the number of accredited companies/production facilities.

Environmental Auditing

At the JFE Group, the environmental auditing has been conducted on the basis of ISO 14001, and with the aim of enhancing environmental management quality. As for the environmental auditing on the basis of ISO 14001, external inspection is made by certification authorities, while internal auditing is conducted by qualified employees who not only have taken the auditor-training course offered by an external institution but also have experience in environment related work

As for the environmental auditing with the aim of enhancing environmental management quality, internal auditors of the head office's audit department and environmental experts of the head office's environmental management division conduct auditing on issues centering on the environmental management status and compliance system with environment related regulation of each of the operation facilities and affiliated companies.

Environmental Education

The JFE Group conducts environmental education at all levels to deepen the understanding of each employee and encourage individual efforts to improve the environment as part of regular work. In each operating company, environmental education is incorporated in training programs for new employees and promotion, and also includes annual programs at each level, covering social trends related to environmental problems, the significance of the environment to JFE and measures being taken by the company, the responsibility of individual employees, and the importance of environmental management.

Green Purchasing

In 2002, the JFE Group established a common group-wide set of "Green Purchasing Guidelines" for purchases of office supplies and parts/materials for production.

In outline, the Guidelines specify

- Adequate study of required quantities before purchase to minimize purchased amounts.
- Consideration of environmental loads over the entire life cycle of final products, in addition to price, quality, delivery schedules, etc.
- Requests for and cooperation with environmental protection efforts of suppliers on a daily basis.

Examples of green purchasing:

- Stationery, office equipment
- Recycled oil, solvent containers, packaging materials, electric/natural gas/hybrid vehicles, etc.

Please visit our website

Profile of ISO 14001-certified companies is provided at the following website:

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

Communication with Society Related to the Environment

Planting trees for "Forest Building in Keihin"

Along with ten companies in the nearby area, JFE Engineering Tsurumi Engineering and Manufacturing Center exchanged a pledge with Yokohama City to cooperate together for the goal of expanding greenery, and is taking part in the Keihin no Morizukuri (Forest Building in Keihin) in an effort to energize the ecology.

In conjunction with the 80th anniversary of the

Tsurumi ward system, in September of last year we held a tree planting festival in a green belt we own alongside Japan Railway's Tsurumi Line. Together with about 50 local residents, company employees and employees from other companies in the JFE Group participated as volunteers.



The Tree Planting Festival held together with the Environmental Planning Bureau, City of Yokohama and the Tsurumi Ward Office



General Affairs Section of the JFE Engineering Tsurumi Engineering and Manufacturing Center – Facilities and Environment Group

We enjoy interaction with many people outside the company through environmental activities such as Keihin no Morizukuri (Forest Building in Keihin) and the Tonbo wa Dokomade Tobuka Forum (The How-Far-Will-a-Dragonfly-Fly? Forum). We want to expand these types of activities within our company and within the JFE Group as a whole, and link this to a greater feeling of satisfaction among employees as well.

Exchanges through Exhibitions

The JFE Group participates in various exhibitions on environmental themes to encourage information exchanges with a wide range of people. At Eco-Products 2007, which attracted approximately 160,000 visitors, we presented JFE's environmental initiatives as well as the Group's technologies/products that support society and life, and contribute to environmental protection.



JFE booth at Eco-Products 2007

Greening of Steelworks

JFE Steel promotes the maintenance of greenery on steelwork grounds. Green areas are visited and inhabited by an abundant cast of living creatures.



Information through the Internet

The JFE Group actively offers information related to the environment through the Internet. On the JFE Group website, its environmental management policy, activities and results are introduced under the title of "Environmental Activities."

Moreover, JFE has been cooperating with an environmental website, where general knowledge on

environmental issues is presented in an easily comprehensive way. Through this linkage, the Group introduces voices of "eco people," who are innovatively involved in environmental issues. This is one example of JFE's efforts to promote environmental awareness activities among the general public.

Please visit our website

JFE Holding's environmental initiative website at:

<http://www.jfe-holdings.co.jp/environment/index.html>

Environmental website "ecobeing" at:

<http://www.ecobeing.net/>



Environmental Accounting

Cumulative investment in energy saving since 1990

366.2
billion yen

Cumulative investment in environmental measures since 1973

517.2
billion yen

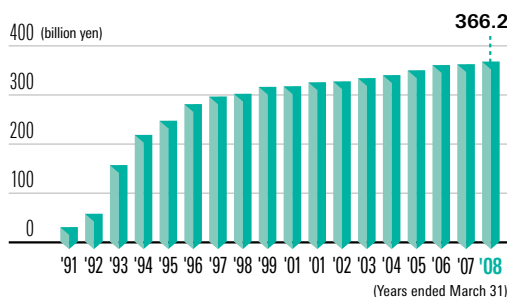
The year ended March 2008:
Environmental cost

83.4
billion yen

Transition of Capital Investment

To promote energy saving and further reduce environmental loads, JFE has actively invested in plant and equipment based on R&D achievements in the Group's proprietary environmental technologies. Cumulative investment in energy saving since 1990 has reached ¥366.2 billion, enabling us to achieve energy efficiencies that rank among the highest in the world.

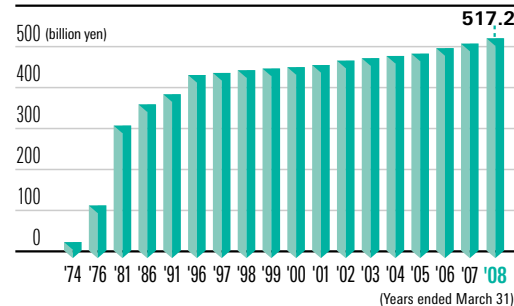
Cumulative Investment in Energy Saving



We are planning further investment in plant and equipment to promote global warming prevention.

Meanwhile, cumulative investment in environmental protection since 1973 has reached ¥517.2 billion. We will continuously invest in measures to further reduce environmental loads.

Cumulative Investment in Environmental Measures*



* Investment in environmental protection:
Total investment in effective use of resources and environmental protection

Environmental accounting

In the year ended March 2008, environment-related capital investment totaled ¥14.8 billion and expenses amounted to ¥83.4 billion. The ratio of environment-related capital investment against total capital

investment is approximately 10%. As a result of activities during the year ended March 2008, the effects of energy conservation were valued at an estimated ¥1.9 billion.

Environmental Protection Costs

			(billions of yen)	
Description			Amount of Investment	Amount of Expenses
Environmental investment & expenses related to JFE's own business	Management	Monitoring & measurement of environmental influence, EMS-related activities, environmental education & training, etc.	0.1	2.5
	Prevention of global warming	Energy conservation, effective use of energy, etc.	4.3	15.5
	Effective use of resources	Recirculation of industrial water, recycling of by-products & waste generated in-house, waste management, etc.	1.1	18.7
	Environmental protection	Prevention of air pollution, water pollution, soil contamination, noise, vibration, ground subsidence, etc.	9.3	38.1
	Miscellaneous	Fees/charges, etc.	—	1.6
Environmental investment & expenses related to customers and society	Research & development	Technology development for environment, energy, prevention of global warming	—	6.4
	Social activities	Protection of nature, support to forestation, information disclosure, exhibition, advertisement, etc.	—	0.6
Total			14.8	83.4

Environmental accounting data stated above were calculated on the basis of the following assumptions.
 Period subject to accounting: April 1, 2007 to March 31, 2008
 Scope of Compiled Data: For costs, data on environment-related investment and expenses at JFE's steelworks were gathered, but in the field of research & development, Group-wide data were collected.
 The effects refer to "presumed effects"; "risk aversion effects," etc., are excluded from calculations.
 Calculations do not include capital investments made primarily for purposes other than environmental protection, such as renovation of superannuated facilities, even if the process as a whole results in a net energy saving compared to the former process.

Reducing Environmental Loads in Business Activities

By Utilizing the World's Most Advanced Technology for Reduction of Environmental Loads

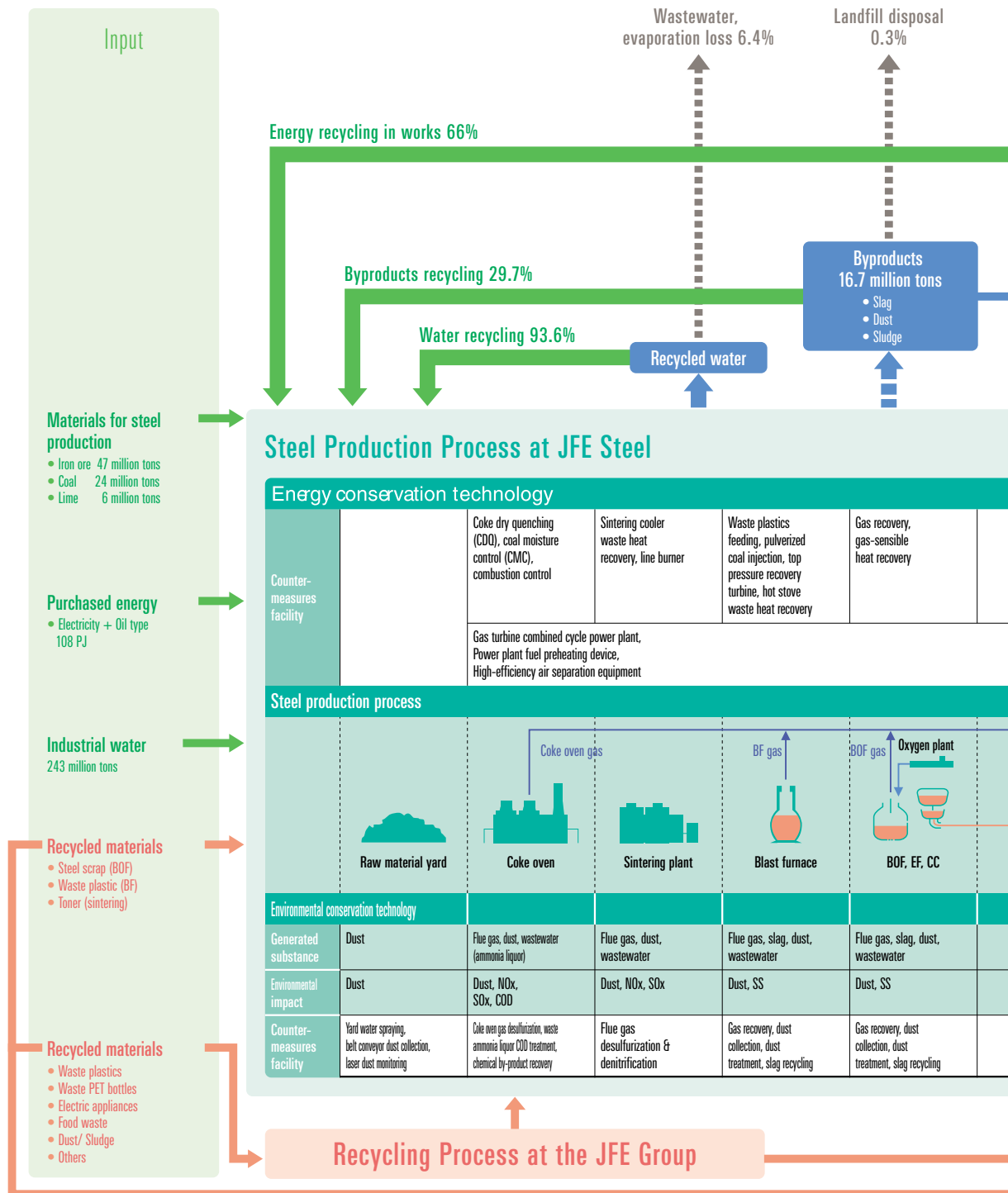
- Energy/Material Flow in the Steelmaking Process19
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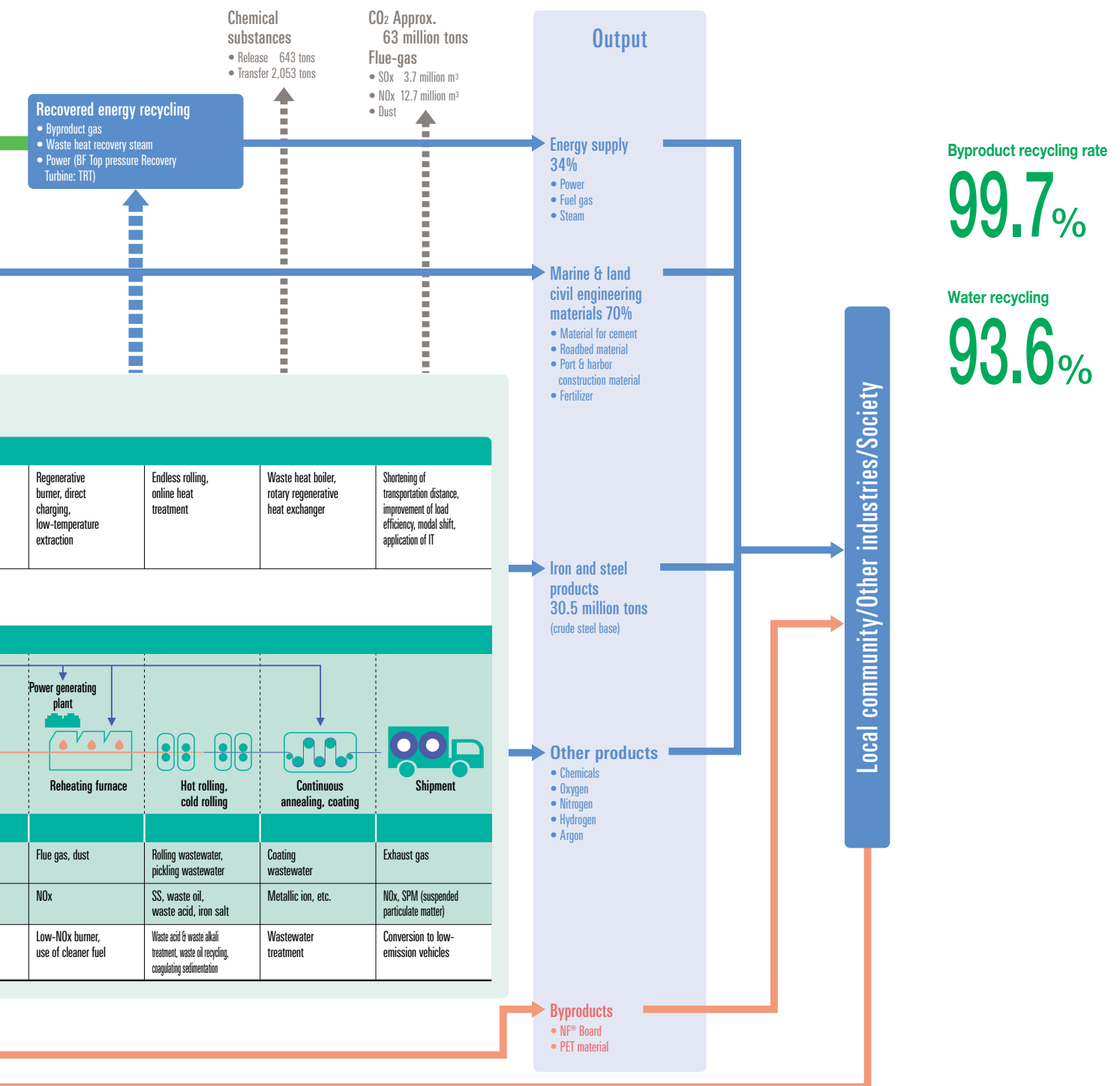
Energy/Material Flow in the Steelmaking Process

JFE Steel Corporation has endeavored to reduce environmental loads through R&D on energy saving and environmental protection technologies and aggressive investment in facilities. As a result, our steel production processes now boast the world's highest

energy efficiency and recycling rates. Far from becoming complacent with its achievements, JFE Steel still continues to conduct R&D and introduce equipment to further reduce environmental loads in each steel production process.

Energy recycling in works
66%





Reducing Environmental Loads in Business Activities at JFE Steel

Air Quality Preservation

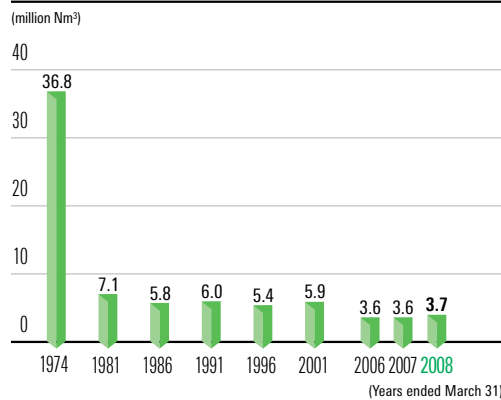
■ Reducing Sulfur Oxide (SOx) and Nitrogen Oxide (NOx) Emissions

In an effort to control emissions of SOx and NOx, JFE Steel is actively pursuing the installation and usage of desulfurization equipment and denitrification equipment for major emissions sources.

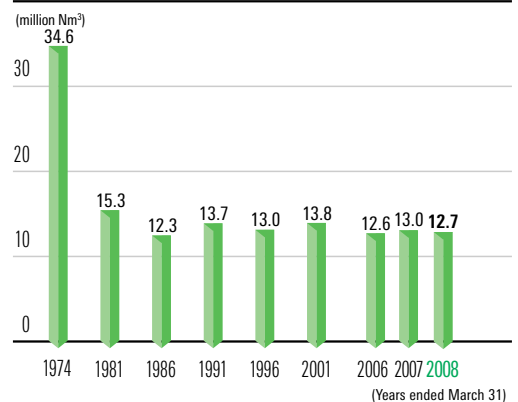


Processing equipment for gas emissions from sintering furnace: an example of the activated coke method at the West Japan Works (Fukuyama)

Transition of SOx Emissions

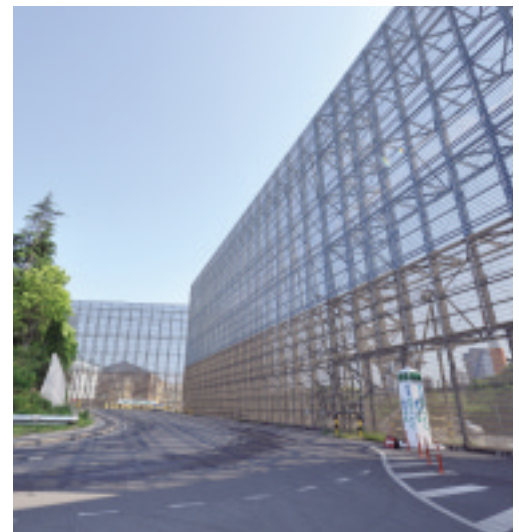


Transition of NOx Emissions



■ Reducing Dust

Since dust is generated from various sources in the steel production process, JFE Steel has been promoting appropriate reduction measures by identifying individual sources and designing specific measures for each source.



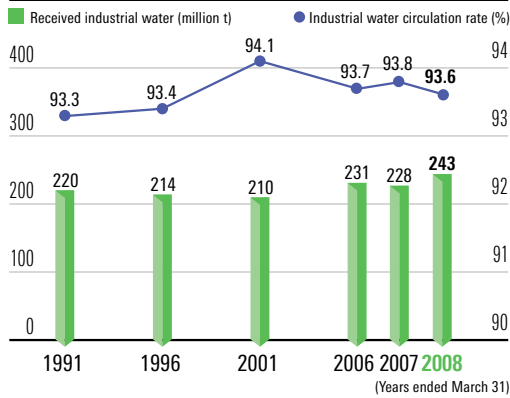
Dust-proof fence at East Japan Works (Chiba)

Water Quality Preservation

JFE Steel has been earnestly promoting circulation/recycling of industrial water consumed in the steel production process, with its industrial water circulation rate* maintained at as a high level as about 94%. For release into public waters, wastewater is given appropriate purification treatment so that its pollution loads can be reduced.

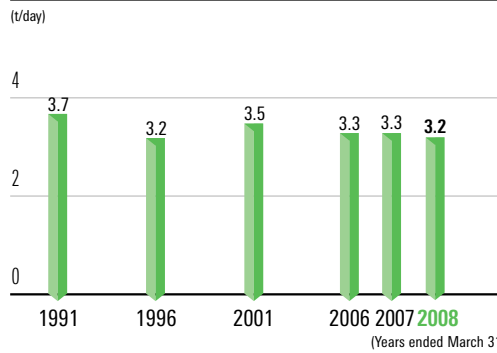
* Industrial water circulation rate
 Industrial water circulation rate = (Total consumption - Received industrial water) / Total consumption

Transition of Received Industrial Water and Circulation Rate



Wastewater processing equipment: an example of the bio-treatment method at West Japan Works (Fukuyama)

Transition of COD (Chemical Oxygen Demand)



Environmental Surveillance

We constantly monitor the load on the atmosphere and on water quality in an effort to keep environmental abnormalities from occurring. Also, if abnormalities do occur, e-mail messages carrying information are automatically sent to the appropriate personnel to enable immediate response.



Exhaust gas sampling



Remote surveillance of environmental data: an example from East Japan Works (Keihin)

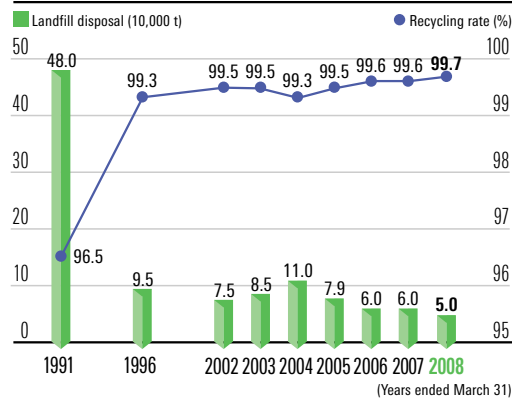


Environmental abnormality information system: an example from West Japan Works (Fukuyama)

Effective Utilization of Byproducts

JFE Steel has been recycling byproducts (i.e., iron and steel slag*1, dust, and sludge*2) in the steel production process in the works as raw materials for steel manufacturing and has been promoting effective utilization of byproducts as resources.

Transition of Landfill Disposal and Recycling Rate of Byproducts



*1 Iron and steel slag: Material consisting of non-iron rock components in iron ore and lime, etc. It separates from and floats on the molten metal. Slag is mainly used as material for cement.

*2 Sludge: Material remaining after dewatering of the mud-like substance separated and removed by circulating water/wastewater treatment equipment.



Sorted waste bricks for recycling at East Japan Works (Keihin)

Appropriate Processing of PCB Waste

We practice appropriate storage of PCB waste in accordance with the law. In April 2008 we began processing PCB waste from our West Japan Works (Kurashiki) at the Kitakyushu Facility of the Japan Environmental Safety Corporation (JESCO).

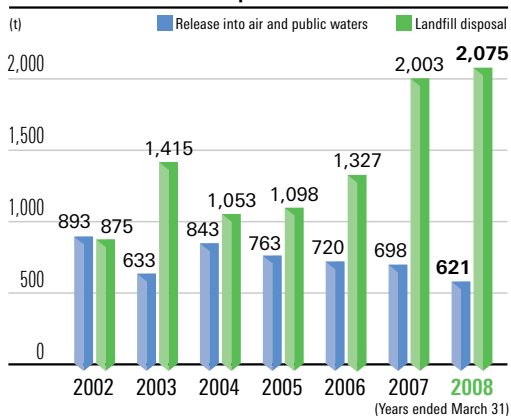


Transporting transformers at the JESCO Kitakyushu Facility

Control/Release Reduction of Chemical Substances

JFE Steel has been promoting voluntarily release reduction program, which gives the first priority to chemical substances having higher toxicity and larger release amounts. Since the year ended March 2002, total release into air and public waters has been reduced. In the year ended March 2008, landfill disposal increased due to the production increase of crude steel.

Release and Landfill Disposal



Substances Reported under PRTR (The Year Ended March 2008)

(Unit: tons; dioxins: g-TEQ)

No.	Substance	Release				Transfer	
		Air	Public waters	Soil on-site	Landfill on-site	Sewerage	Off-site
1	Zinc compounds (water-soluble)	0	5.5	0	0	0	0
16	2-aminoethanol	2.0	2.6	0	0	0	0
25	Antimony and its compounds	0	3.2	0	0	0	17
26	Asbestos	0	0	0	0	0	46
30	Bisphenol A type epoxy resin (liquid)	0	0	0	0	0	0
40	Ethylbenzene	37	0	0	0	0	0.7
43	Ethylene glycol	0.3	0	0	0	0	6.0
63	Xylene	192	0	0	0	0	0.7
68	Chromium and chromium (III) compounds	0.04	1.2	0	21	0	821
69	Chromium (VI) compounds	0	0	0	0	0	0.9
85	HCFC-22	0.04	0	0	0	0	3.6
100	Cobalt and compounds	0	0	0	0	0	0.3
132	1,1-dichloro-1-fluoroethane (HCFC-141b)	63	0	0	0	0	0
144	Dichloropentahloropropane (HCFC-225)	13	0	0	0	0	0
145	Dichloromethane	26	0	0	0	0	0
177	Styrene	0.7	0	0	0	0	0
178	Selenium and its compounds	0	0.2	0	0	0	2.9
179	Dioxins	8.2	0.002	0	0	0	0
198	Hexamethylenetetramine	0	0.007	0	0	0	0
200	Tetrachloroethylene	24	0	0	0	0	0
207	Copper water-soluble salts	0	0	0	0	0	0
224	1,3,5-Trimethylbenzene	11	0	0	0	0	0.02
227	Toluene	76	0	0	0	0	2.9
230	Lead and its compounds	0	0.5	0	0	0	200
231	Nickel	0	0	0	0	0	48
232	Nickel compounds	0.02	2.4	0	0	0	48
253	Hydrazine	0	0.07	0	0	0	0
266	Phenol	1.0	0.02	0	0	0	0
283	Hydrogen fluoride and its water-soluble salts	0	38	0	0	0	28
299	Benzene	40	0	0	0	0	0
304	Boron and its compounds	0	21	0	0	0	5.1
307	Poly (oxyethylene) alkyl ether	0	0	0	0	0	0.01
309	Poly (oxyethylene) nonylphenyl ether	0	41	0	0	0	2.3
310	Formaldehyde	0	0	0	0	0	0
311	Manganese and its compounds	0.06	10	0	0.9	0	746
345	Mercaptoacetic acid	0.002	0	0	0	0	0
346	Molybdenum and its compounds	0	9.2	0	0.09	0	71
353	Tris (dimethylphenyl) phosphate	0	0	0	0	0	2.4
Total		486	135	0	22	0	2,053
		Total release 643				Total transfer 2,053	

Efforts to Restore Marine Environments using Steel Byproducts

JFE Steel is dedicated to developing applications for steel byproducts and expanding their usability. Products created out of steel byproducts are expected to play a part in preserving the ocean as functional materials.

Marin Block®

- Seaweed and coral growing beds -

The world's first Marine Block® is a completely new product made only from the source materials of CO₂ gas emissions and steel byproduct that is generated in steel works converters. The material is the same calcium carbonate found in shells and coral, which blends well with marine life. Because of this, it aids the recovery of coral reefs, reduces CO₂ in gas emissions, and helps in the fight against global warming.

Frontier Stone™ & Frontier Rock™

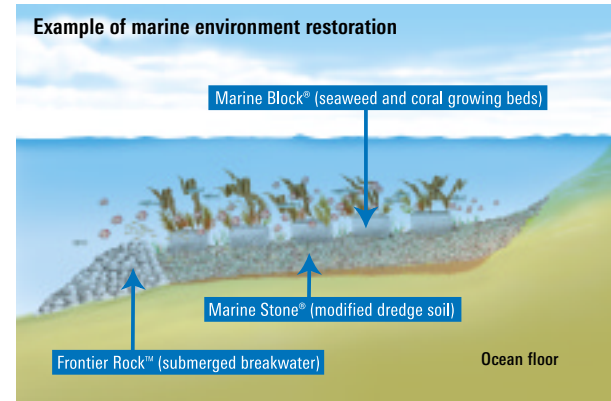
- Artificial rock material replacing natural crushed rock -

This is an artificial rock material made out of steel byproducts from blast furnaces and converters in steel works. Frontier Stone™ is an artificial rock material with a particle size of 300 mm or less, and Frontier Rock™ is a large artificial rock material. They can be used as construction work materials at harbors and ports, and are excellent at supporting sea life such as seaweed.

Marine Stone®

- Modifying dredge soil -

Modifying dredged soil with Marine Stone® mixture can turn dredged soil into banking material and has an effect on phosphorus adsorption, a cause of eutrophy.



Frontier Rock™



Rockfish living on Frontier Rock™



Seaweed growing on Marine Stone®

Recovery of coral reefs with Marine Block®

Coral reefs are spread out in great quantities across ocean areas from the tropics to the subtropics. In addition to functioning as mating and feeding grounds for a variety of organisms, they serve an important role as natural breakwaters for island countries. However, the coral reefs of the world are facing a severe crisis because of problems like the inflow of sediment from land, an explosive increase in predators such as the acanthaster (also known as the crown-of-thorns sea star), and the increase in

ocean water temperatures due to global warming.

Coral reefs are being damaged through whitening caused by increasing ocean water temperatures, and we are involved in the development of technology to help coral reefs reclaim the seas. By combining our Marine Block® as a growing base for coral with the coral larvae substrates devised by professor Okamoto of the Tokyo University of Marine Science and Technology, we are working towards coral reef recovery.



15 months after installation (young coral is growing healthily on Marine Block®)



Substrate with coral larvae attached is placed on Marine Block®



135 millimeter coral attached to Marine Block® 31 months after installation



Coral seen from above (*Acropora sp.*)

Project head: **Kumi Oyamada**

Appointed in both the Aqua Bio Chemical Research Division of JFE R&D Corporation and the Resource Circulation Promotion Department of JFE Steel

We are running verification tests around Ishigaki Island and Miyako Island, and Indonesia as well, and are already seeing corals that have grown larger than 10 centimeters in diameter on Marine Blocks®. I want to use this technology to preserve not only coral reefs, but to help preserve the wider natural environment as well.



Reducing Environmental Loads in Business Activities at JFE Engineering

Material Balance

Input

Raw materials	74,591 t
Energy	
Electricity consumption	32,478,470 kWh
A-heavy oil	269.8 kl
Kerosene	92.5 kl
Light oil	205.3 kl
Gasoline	23.3 kl
Urban gas	887,450 Nm ³
LPG	227.6 t
LNG	0 t
Water	191 thousand tons

JFE Engineering

- Tsurumi Engineering and Manufacturing Center
- Shimizu Works
- Tsu Works

Output

Products	68,631 t
Air pollutants	
CO ₂	16,386 t
NO _x	max 128 ppm
SO _x	max - ppm
Dust	max 0.1140 g/Nm ³
Waste generated	1,522 t
Wastewater	270 thousand tons
Other (PRTR)	204.2 thousand kg

Global Warming Prevention

CO₂ emissions in comparison to the year ended March 1991 levels down

2.4%

JFE Engineering constructs environmental management systems in line with the function and activities of each production center as our part in the fight against global warming.

In the office area, we do what we can to promote energy conservation by using a highly efficient Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System, turning off lights during lunch breaks, and keeping unused computers turned off. In the year ended March 2008, we installed solar street lights at the Tsurumi Engineering and Manufacturing Center.

In the production divisions, we have employed measures such as saving electricity by reducing factory

lighting on bright days, streamlining compressed air usage, and implementing energy conservation patrols.

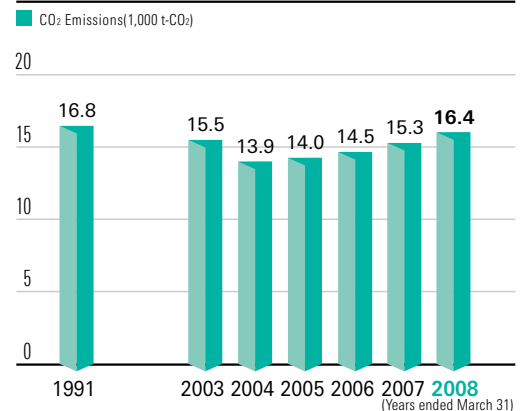
In the production divisions and office divisions together, the total amount of CO₂ emissions was 16.4 thousand tons for the year ended March 2008. This is a 2.4% decrease from the 16.8 thousand tons for the year ended March 1991.

From August 2004 onward, we have been striving to assess the amount of CO₂ emissions for local construction sites. In addition, from the year ended March 2007, we began trial implementation of other activities designed to reduce CO₂ output such as reducing occurrences of machine idling at construction sites.



Solar street lights installed at the Tsurumi Engineering and Manufacturing Center

Transition of CO₂ Emissions



Reducing Generation/Discharge of Waste

JFE Engineering strives to reduce generation and discharge of waste.

The office division has carried out educational activities through on-site broadcasting and posters, etc., as well as more segmented sorting for the purpose of reducing the landfill disposal rate of office waste.

The production division has endeavored to reduce unit waste discharge per hour. Both the centers and works have worked on thorough sorting, complete sorting and effective use of recyclable waste, and industrial waste patrol to check sorting conditions.

The planning and designing division has been making environment-friendly plans and designs by adopting



Office waste sorting system (Tsurumi Engineering and Manufacturing Center)

Reduction of Waste (The Year Ended March 2008)

Reduction of waste in office division		
Landfill disposal of office waste	Target	Actual
Tsurumi Center (%)	20	19.1
Shimizu Works (%)	34	33.4
Tsu Works (%)	implementing in the production division.	

Reduction of waste in the production division		
Unit waste discharge	Target	Actual
Tsurumi Center (t/1,000 hrs)	1.0	1.1
Shimizu Works (t/1,000 hrs)	0.93	0.46
Tsu Works (t/1,000 hrs)	0.32	0.42

Reduction of waste at site construction works		
Landfill disposal rate of site construction waste	Target	Actual
Construction work sites (%)	35	19.0

recycling materials or selecting energy-saving equipment, etc.



Area cleanup activities at the Tsurumi Engineering and Manufacturing Center

Control and Reduction of Chemical Substances

In compliance with the Pollutant Release and Transfer Register (PRTR) Law, JFE Engineering controls release and transfer volumes of the designated chemical substances and reports those figures to the national government through local governing bodies. The company has been promoting activities to reduce the controlled substances including paints, solvent, and gasoline. Moreover, its reduction efforts go beyond such PRTR substances and include gases, CO₂ and propane, etc., to make its business activities environment-friendly.

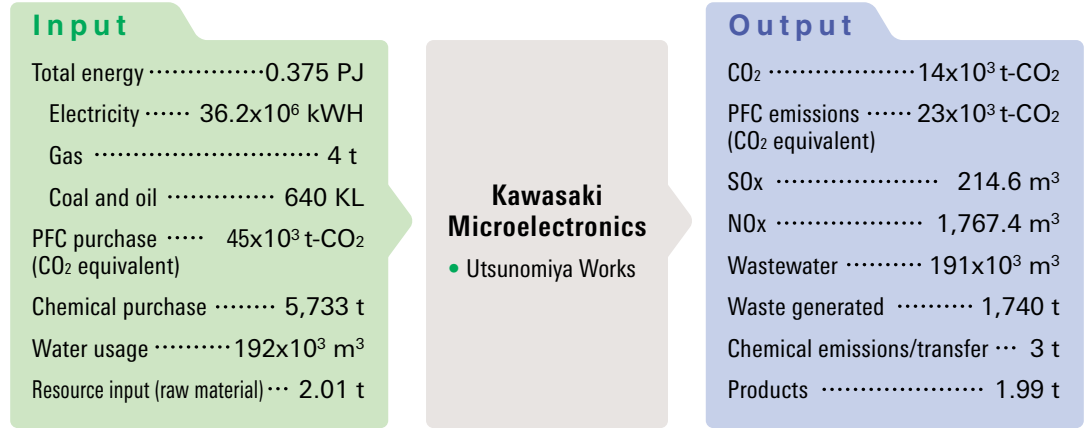
Substances Reported under PRTR (The Year Ended March 2008)

(kg)

No.	Substance	Release				Transfer	
		Air	Public waters	Soil on-site	Landfill on-site	Sewerage	Off-site
30	Bisphenol A type epoxy resin	0.0	0.0	0.0	0.0	0.0	2,883.8
40	Ethylbenzene	25,964.3	0.0	0.0	0.0	0.0	2,461.1
63	Xylene	105,321.2	0.0	0.0	0.0	0.0	14,396.3
227	Toluene	33,992.0	0.0	0.0	0.0	0.0	6,363.2
230	Lead and its compounds	0.0	0.0	0.0	0.0	0.0	1,150.0
311	Manganese and its compounds	0.0	0.0	0.0	0.0	0.0	11,631.2
Total		165,277.5	0.0	0.0	0.0	0.0	38,885.6
		165,277.5				38,885.6	
		204,163.1					

Reducing Environmental Loads in Business Activities at Kawasaki Microelectronics

Material Balance



Preventing Global Warming

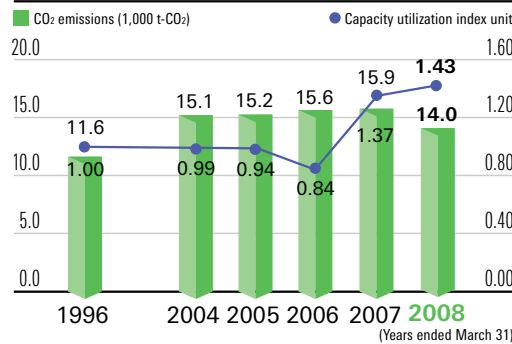
In the year ended March 2008, there was a slight increase in energy-origin unit CO₂ emissions per capacity utilization. In spite of this, we were able to reduce the actual emission amount compared to the previous fiscal year due to a sweeping improvement of 2.3% in the energy saving rate that resulted from improvements in boiler or coolant water operation.

Beginning as scheduled in the year ended March 2008, Kawasaki Microelectronics has started putting into action our plan for the substitution of C2F6 gas,

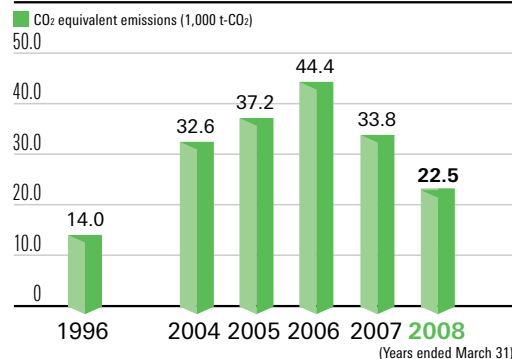
which accounts for approximately 70% of total emissions of PFC gases. However, because we are currently witnessing a suspension in the supplying of substitute gases, it became difficult to achieve a total abolition of C2F6 during the year ending March 2009. Currently, we are commencing experiments with new replacement gases aiming for practical application in the first half of the year ending March 2010.

*Energy saving rate
Percentage of energy saving effect for the fiscal year relative to energy consumption (crude oil equivalent) in the works as a whole

Energy-Origin CO₂ Emissions



CO₂ Equivalent Emissions of PFC, HFC and SF₆ Gases



Reducing Generation/Discharge of Waste

The amount of sludge generated by wastewater processing facilities for the year ended March 2008 experienced a more than 10% decrease compared to the year ended March 2007 due to improvements in our processing methods.

Control and Reduction of Chemical Substances

In the year ended March 2008, Kawasaki Microelectronics discontinued use of water-soluble copper salts and reduced usage of one of our used substances. In the year ended March 2008 Kawasaki Microelectronics actively pursued endeavors to reduce the amount of hydrogen fluoride used to clean products, being a substance that requires reporting.

Substances Reported under PRTR (The Year Ended March 2008) (kg)

No.	Substance	Release				Transfer	
		Air	Public waters	Soil on-site	Landfill on-site	Sewerage	Off-site
283	Hydrogen fluoride and its water-soluble salts	107	928	0	0	0	1,173
Total		1,035				1,173	

Reducing Environmental Loads in Business Activities at JFE Urban Development

Construction Planning Geared towards Environmental Load Reduction

In the commercial facilities which JFE Urban Development is currently developing in the Soga seaside district, we are dedicated to increasing energy efficiency through conservation measures, including heat insulation and sunlight screening, based on the Judgment Criteria of the Construction Clients stated in the Japan's Act concerning the Rational Use of Energy.

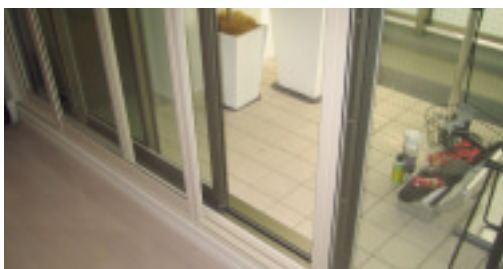
JFE Urban Development also ensures an Energy Efficiency Grade 3 or higher in the Japan Housing Performance Indication System for our residential projects. Additionally, we are committed to implementing construction plans for residential projects geared at reducing the environmental load, such as acquiring Housing Performance Evaluation Report based on the Japan Housing Performance Indication System.



Commercial facilities in development in the Soga seaside district

Introduction of an Energy Saving System

We strive to reduce the environmental load in residential project complexes provided by JFE Urban Development by using equipment with superior energy saving functionality, such as Natural Refrigerant Heat Pump Water Heater and High-efficiency Condensing Gas-fired Water Heater, and PVC window frames at the top class among construction materials that are classified as energy saving in the heat insulation efficiency indication system for windows and related areas.

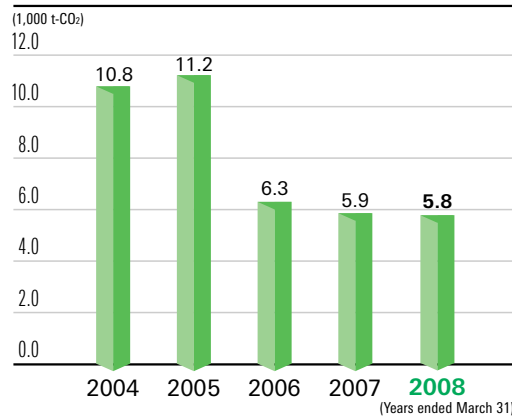


"Grand Scena Hachimanyama," an example of a residence with PVC window frames installed

Activities to Prevent Global Warming in JFE Operations

In Orto Yokohama and THINK (Techno Hub Innovation Kawasaki), a facility operated by JFE Urban Development, we are embarking on replacement and retrofitting of equipment and devices, such as air conditioning systems and lighting fixtures. In this process, we select equipment and devices which are superior in energy conservation. We are devoted to controlling energy consumption through these activities.

CO₂ Emissions at THINK



Providing Abundant and Pleasant Environments

At the apartment complex Urban View Sakishima (joint project, 600 dwellings), we placed bountiful greenery stretching upwards and along the gently flowing Sakishima Canal. In addition, we added features including a rooftop garden, water scenery, and open deck in the common area. Providing wonderful environments like this is one way to help ease the heat island phenomena.



Greenery project example: Urban View Sakishima

THINK (Techno Hub Innovation Kawasaki)

<http://www.techno-hub-innovation.com/>
 For further information

JFE-style
 (Updated information on new apartments)

<http://www.jfe-style.com>

Reducing Environmental Loads through Products and Technologies

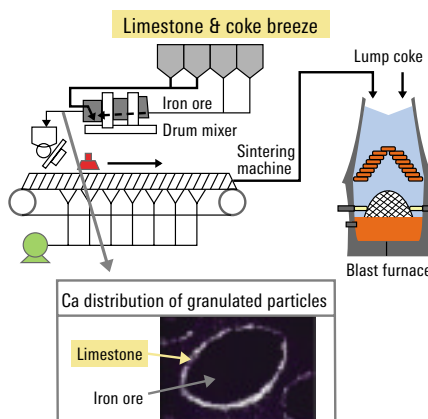
**Providing Society with Steel Products,
Engineering Technologies, and Recycling Businesses,
All of Which Contribute to Global Environmental Protection**

- Research & Development of Environmental Conservation Technology32
- JFE's Technologies Which Contribute to Global Environmental Protection33
- Contributing to Global Environmental Protection through Steel Technologies/Products ...39
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- Recycling Technology Supporting a Sustainable Society.....43

Research & Development of Environmental Conservation Technology

High quality, high productivity sintering technology with carbon dioxide gas emission control - Contributing to the reduction of greenhouse gas emissions -

In the Steel Research Laboratory, we developed new granulation technology that simultaneously facilitates both an increase in productivity of the sintering process for iron-ore and a reduction of the amount of coke breeze used. We then introduced this technology into the sinter plants of the West Japan Works. This original JFE technology rapidly projects coke breeze, which is used as a heat source, and limestone, which is used as a bond, from the back end of drum mixers in order to segregate coke and limestone at the periphery of iron-ore granulated particles and thus reduce the amount of coke breeze used.



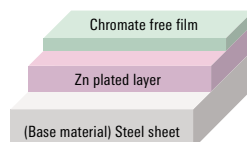
Steel Research Laboratory
Ironmaking Research
Department
Senior Researcher
Nobuyuki Oyama

Environment-friendly chromate free steel sheets - Development of Eco-Frontier Series -

Steel Research Laboratory is developing environment-friendly chromate-free coated steel sheets; Eco-Frontier Series.

Newly developed Eco-Frontier JM has a chromate free coating layer, mainly consisting of inorganic compounds, on a hot-dip galvanized steel sheet (GI) base. This product exhibits excellent corrosion resistance, spot weldability, and resistance to discoloration by heating, and is used for parts such as brazing portions of external air conditioner equipment.

We will continue to improve functionality of chromate-free coated steel sheets further to contribute to global environmental preservation.



An example of corrosion test results

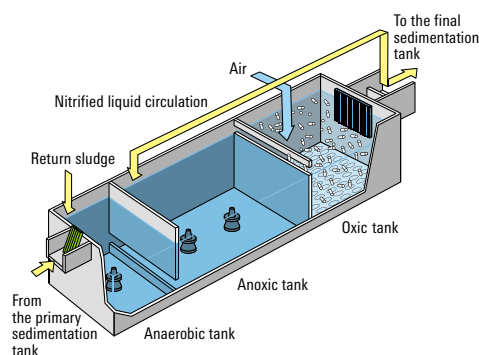
Salt Spray Test (SST)		
	Eco Frontier JM (Chromate-free)	Chromate treated
Surface appearance after SST (72 hours)		



Steel Research Laboratory
Electrical Appliance Steel &
High Performance Components
Research Department
Senior Researcher
Nobue Fujibayashi

An Operation Method for Advanced Wastewater Treatment Facilities that Can Reduce Energy Consumption

JFE Engineering developed advanced treatment technology that eliminates contaminants present in wastewater (COD, nitrogen, and phosphorus). Because microorganisms exist in high densities, this treatment system using a microorganism immobilization carrier developed independently by JFE can purify water efficiently. This is why it is used in large-scale wastewater treatment facilities. Because this kind of advanced treatment demands heavy power consumption for areas such as aeration power, JFE R&D is following up JFE Engineering's work by developing and commercializing an operating method that enables a minimization of power requirements by implementing aeration on a level that corresponds to wastewater quality. This operating method was adopted in the new Kawasaki City wastewater treatment facility.



Treatment flow:
Anaerobic tank — Anoxic tank — Oxidation tank with carriers



JFE R&D
Aqua, Bio and Chemical
Department
Researcher
Yohei Tomida

JFE's Technologies Which Contribute to Global Environmental Protection

The world's first nanotech high-strength hot-rolled steel sheets for automobile parts
NANO HITEN

High-end steel sheets have come to be used extensively in automobile. Recently, in order to further reduce weight and improve crashworthiness, demand has risen for higher strength steel. JFE successfully developed a new higher strength steel with excellent stretch flange formability using nanometer-sized carbides that are ten times finer than those of conventional steels. This steel, named "NANO* HITEN™," is the first high-strength automotive steel to use nanotechnology.

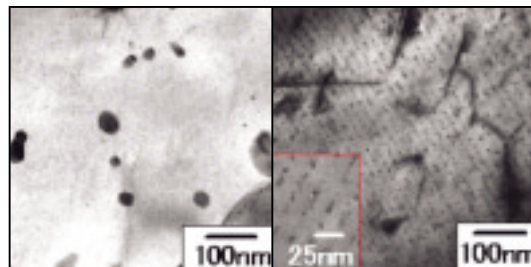
The main technique in the manufacturing process



for the new steel is the combining of the ferrite matrix and the fine carbides. Generally, fine carbides coarsen easily in a ferrite matrix. JFE successfully achieved fine carbide retention in a ferrite matrix during the manufacturing process. The new technique has made it possible to exhibit both high strength and excellent formability.

"NANO HITEN™" has won many prizes, and in the year ended March 2008 received The 21st Century Encouragement of Innovation Prize, at Japan's national commendation. "NANO HITEN™" has been adopted as a material for automobile suspensions and crashworthy equipment, and its applications are expected to increase in the future.

*New Application of Nano Obstacles for dislocation movement



Left / Conventional steel carbide
 Right / NANO HITEN carbide



Automobile suspension components manufactured using NANO HITEN



**New high-corrosion resistance stainless steel contributes to resource conservation
JFE443CT**

With prices for metal resources soaring, there is a heightened sense of crisis concerning resource scarcity. While SUS304 (austenitic stainless steel), the most common stainless steel material, offers excellent corrosion resistance, it is affected significantly by the price of nickel because of its 8% nickel content.

At JFE, we developed JFE443CT, the world's first ferritic stainless steel sheets, which offer corrosion resistance equal to SUS304 while containing absolutely no nickel or molybdenum, two rare metals. This product emerged from JFE's discovery that we could achieve a marked corrosion resistance improvement effect by adding copper while simultaneously increasing the amount of chromium.



JFE443CT was awarded the Nikkei Sangyo Shimbun Award for Excellence in Products and Services in 2006, the Fuji Sankei Business-i Advanced Technology Grand Prix Sankei Shimbun Co., Ltd. Prize in 2007 and the Ichimura Prizes in Industry - Contribution Prize in 2008. It has also earned a strong positive evaluation from society as a product contributing to resource conservation. Because the adoption of JFE443CT for a variety of applications including commercial kitchenware, building materials and industrial machinery is expanding rapidly, JFE has increased production amount to meet demand and is contributing to society.

Left /
Cistern tank
Right /
Home cookware



Internal parts for thermo-pots



Solar battery boasts world's top class conversion efficiency through SILICON WAFERS

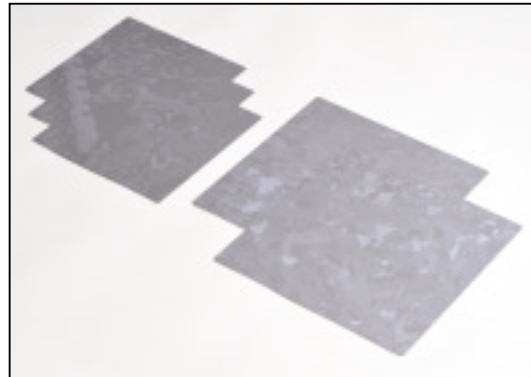
Because they do not emit CO₂ when generating electricity, solar batteries that convert the sun's energy into electric power have attracted interest as a trump card among global warming prevention measures. At JFE, we began production of silicon wafers for solar batteries in 2001. As of 2007, JFE had annual production capacity of 180-megawatts, equivalent to roughly 5% of the world's total solar battery power output.

By utilizing the technological capabilities cultivated through its casting technology for steel manufacture, JFE produces silicon wafers for solar batteries that achieve solidification structure uniformity. By using JFE's polycrystalline silicon wafers, some solar cells have achieved and maintain the world's highest level of conversion efficiency of 17% or more.



In 2005, JFE applied its steel production technology to begin manufacturing solar grade silicon (SOG-Si) in response to the shortage of the basic raw material, high-purity silicon (polysilicon), that resulted from the rapid increase in solar battery demand. SOG-Si ensures quality equivalent to polysilicon, and today JFE maintains a share of the market for solar battery wafer raw materials with an annual production capacity of over 400 tons.

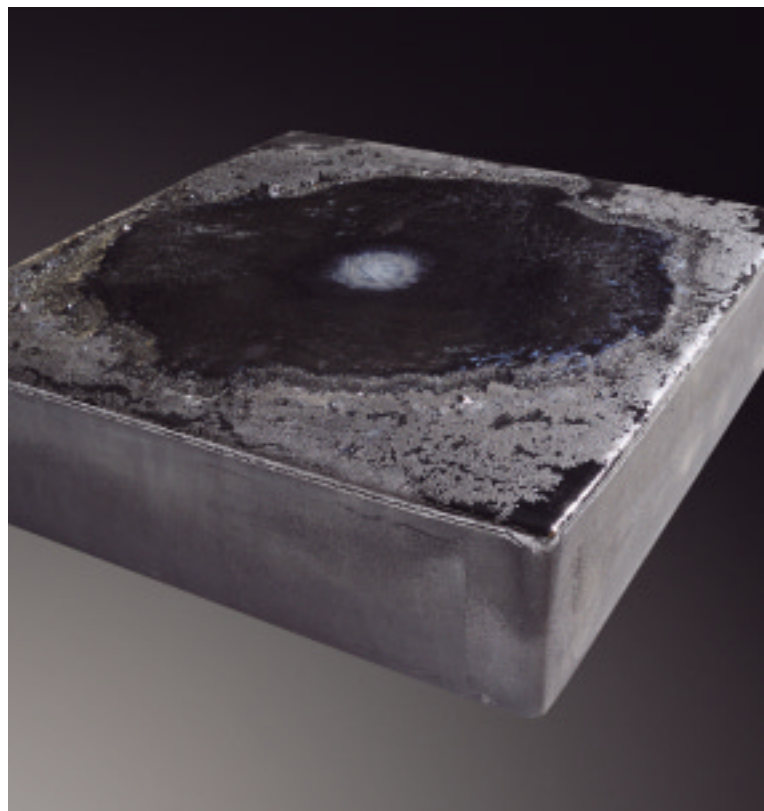
JFE will continue to take advantage of its steel manufacturing technology in the future to deliver products and raw materials that contribute to the prevention of global warming.



Polycrystalline silicon wafers for solar batteries



Silicon block



Silicon ingot



**Support for lithium ion secondary batteries
FINE SPHERICAL GRAPHITE POWDER**

Today's world requires great amounts of energy for a wide range of applications such as advanced telecommunications and transportation, yet also demands environmentally friendly technologies and reduction of fossil fuel use. The development of storage battery and other electrical storage technologies is therefore an urgent issue. JFE has demonstrated the superiority of its technology by developing products such as lithium ion secondary batteries (LIB).

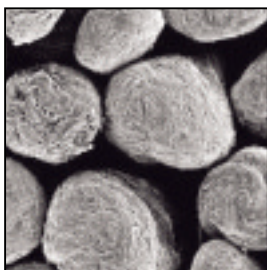


LIB made their way into practical use during the 1990s as batteries for small, mobile devices. JFE's fine spherical graphite powder has been adopted as a high performance negative-electrode material. Applications for LIB in sectors such as hybrid automobiles and electric vehicles are expected to grow in the future.

JFE produces fine spherical graphite powder using a proprietary technology to generate mesophase spheres (spherical crystals) by the heat treatment of coal-tar pitch, a by-product of the coking furnaces used in the steel manufacturing process. JFE then extracts the spheres and converts them to graphite. The resulting product's excellent crystallinity and high filling property contribute to improving LIB capacity and cycling characteristics (electrical charge and discharge frequency).

The high performance activated carbon that highly activates the spheres is also being utilized in the electrode material for electric double layer capacitors, a new electricity storage device, for which additional demand is anticipated in the future.

Fine spherical graphite powder



Mesophase spheres

New system goes easy on the marine environment **SHIP BALLAST WATER TREATMENT SYSTEM**

To maintain hull stability and sailing safety, seawater (ballast water) is pumped into the ballast tanks of empty cargo vessels and tankers. This ballast water is later discharged at ports of loading, where negative affects on ecosystems have been pointed out in that the ballast water contains marine organisms from an ocean area different from the area where the organisms are released. In 2004, the International Maritime Organization (IMO) adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, and when this agreement takes full effect, signatory countries will be required to install equipment to properly process the ballast water on board from other countries.



JFE is already developing a ballast water treatment system for ships that is friendly to the marine environment. This latest system treats ballast water by using a high performance filter to return many living organisms to their original sea zone when seawater is pumped into the ballast tanks of a ship, then processing the small plankton and bacilli such as E. coli bacteria in the filtered water using chemicals and cavitation (a phenomenon that generates bubbles by compressing and then rapidly releasing flow velocity), and finally discharging the treated water into the sea after the small quantities of residual chemicals have been neutralized to ensure they are non-polluting.

We will continue to utilize the JFE Group's shipbuilding technology, service water and wastewater processing technology, and machine technology to the maximum extent possible to help preserve the marine environment.





0 50 100mm

Energy solutions in the industrial sector
BIOMASS BOILER / WOOD BIOMASS GASIFICATION FACILITY

The need to begin converting fuels for power in the industrial sector to biomass or recycled fuels has increased rapidly as a measure for preventing global warming and for addressing the sharp rise of energy prices. At JFE, we have been working proactively for many years to develop technology to expand the use of biomass and recycled fuels.

JFE's biomass boiler is a system that can be adjusted to the type of waste product fuel available, including wood chips, sludge and waste plastic, to meet the needs of a resource recycling society. This summer, JFE will complete such a system for Kishu Paper Co., Ltd.'s Kishu Plant, where it is being eagerly awaited to provide the plant's main source of power.



A wood biomass gasification facility is an advanced system designed to work in harmony with the environment by gasifying wood biomass such as lumber scraps and bark, rather than simply burning them, extracting the gaseous fuel and converting it efficiently into electricity and heat. JFE is currently constructing a similar facility for Daio Paper Corporation's Kani Plant.

JFE will continue to contribute widely to the supply of environmentally friendly eco-energy in the future.

Contributing to Global Environmental Protection through Steel Technologies/Products

In the Automobile Field

■ From High Tensile Strength Steel to Ultra High Tensile Steel

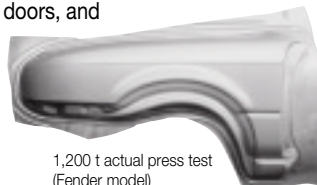
Demand for high tensile steel sheets (HITEN) is growing as a material that enables both automobile body weight reduction and collision safety. Recently, demand has increased for higher tensile strength steel sheets (Ultra HITEN). The cold rolled 1180MPa, created with our proprietary WQ (Water Quenching) continuous annealing process, was employed for integrally molded door impact beams made with conventional press forming.



Center pillar of 980 MPa grade HITEN steel sheet

■ Highly Lubricant GA Steel Sheet: "JAZ® (JFE Advanced Zinc)"

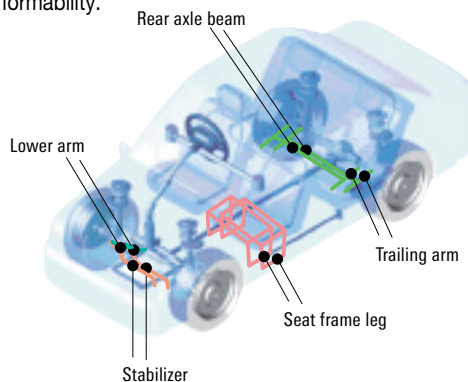
As an environment-friendly product, "JAZ®" does not contain phosphate or heavy metal elements which used to be contained in conventional lubricated GA steel sheets. In this unique product, a surface reforming layer with nano-level thickness is formed on a zinc coated layer. JAZ® has been adopted in automotive outer panels or inner panels which are otherwise difficult to form. More specifically, it is used in side panels, fenders, doors, and wheelhouses, etc.



1,200 t actual press test (Fender model)

■ Automotive Steel Tubes

High performance electric resistance welded steel tubes known as "HISTORY (high speed tube welding and optimum reducing technology) steel tubes" contribute to automotive weight reduction by realizing hollow tubes and properties of high strength and high formability.



■ Automotive Stainless Steel Sheet

An exhaust manifold material, JFE-WX1 is the only ferritic stainless steel in the world, which can be used at ultra-high temperature. It improves auto fuel economy, reduces CO₂ emissions, and contributes to exhaust gas purification.



■ Electrical Steel Sheets for Hybrid Cars

Highly efficient and non-oriented electrical steel sheets, when adopted in driving motor cores, improve automotive fuel economy and contribute to downsizing/weight reduction of automobiles. Meanwhile, highly efficient and silent electrical steel sheets containing 6.5% Si (known as "Super Core") are adopted in reactor cores for boost converter power systems.



Reactor core-block core type

In the Life and Energy Fields

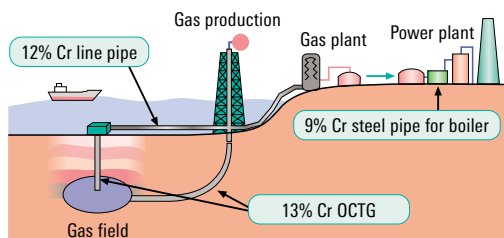
■ Chromate-free coated steel sheet

Chromate-free coated steel sheet is an environment-friendly product, since it contains no chrome (VI). A uniquely designed composite film consisting of a special organic resin and inorganic substance secures as much corrosion resistance as conventional products. It is now used in internal panels of home electric appliances and vending machines, internal components of OA equipment, chassis of audiovisual equipment, and other parts.



■ Martensitic Stainless Steel Tubes /Threaded Joints

13% Cr OCTG (Oil country tubular goods) and 12% Cr line pipe for production and transport of oil and natural gas, 9% Cr steel pipe for high-efficient power generation and threaded joints are materials having long life and low environmental loads. As for threaded joints used in combination with oil well tubes, new products using no environmental pollutants are provided.



■ Universal Bright F (Awarded the Technology Prize by the Surface Finishing Society of Japan in 2005)

This award-winning steel sheet product enables can manufacturers to skip coating and printing processes, and thereby eliminates harmful substances and reduces CO₂ emissions.



■ Resource-saving Type Stainless Product (Awarded 2007 Ichimura Industrial Award, Meritorious Achievement Prize)

JFE443CT is all-purpose stainless steel which does not contain such rare resources as nickel or molybdenum but ensures high corrosion resistance equivalent to SUS304. When applied to cooking pans for induction



heating (IH), it leads to substantial energy saving because of its properties of excellent heat transmission and magnetism.

■ High Performance Hot-Dip Galvanized Steel Sheet: JFE ECOGAL™

This 5% Al-Zn alloy-coated steel sheet is superior in formability and paintability. It is used in a wide range of fields, such as building material applications, electric appliances, and the other general usages.

■ High Tensile, Thin Walled Drum Can: "Eco Feather"

Using high tensile strength steel with high workability enabled us to increase the drum can strength and make the walls thinner, making this can a contribution to resource conservation.



■ High Strength Steel Plates for Large Containers in Marine Applications

These steel plates are manufactured using Super-OLAC. Compared to existing grade plates, they have high yield strength (up to 460Mpa) and superior weldability and the high-heat input welding zone shows excellent low temperature toughness. The lightening of ship hulls that is achieved through reducing the plate thickness contributes to reductions in transport energy as well as construction costs.



■ Heat-treatment Online Process (HOP)

HOP is an online heat-treatment device equipped with a large scale induction system that enables productivity levels similar to those of plate rolling and precise temperature control plates. It is a production technology for highly functional products with superior energy conservation.

JFE Engineering's Activities to Prevent Global Warming

Preventing global warming through supplying energy conservation technology

JFE Engineering has been contributing to global warming prevention with cutting-edge technologies to reduce CO₂ emissions, such as biomass technology, energy technology and CO₂ immobilization technology.

■ Clathrate Hydrate Slurry (CHS)

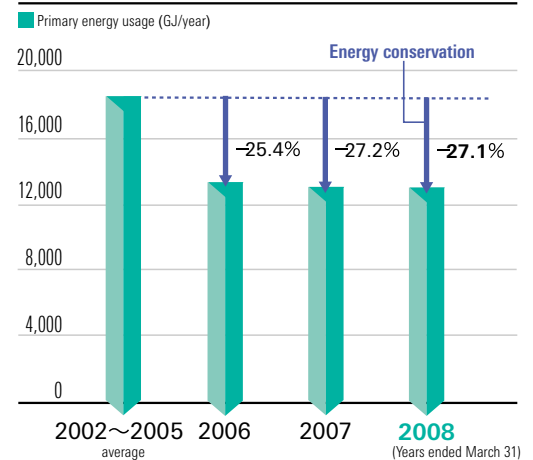
The Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System is a revolutionary technology that drastically cuts CO₂ emissions and conserves energy for central air conditioners in large scale office buildings and commercial facilities.

Clathrate Hydrate Slurry is a fluid that can store over twice the amount of cold energy as the water used in conventional central air conditioning systems. By efficiently storing a large quantity of cold energy during the night, when the air temperature falls, and using the stored cold energy during the daytime when the air temperature rises, CHS provides a higher level of energy conservation and a dramatic reduction of both CO₂ emissions and air conditioning operation costs. It

also contributes to peak cuts and load leveling for energy.

This technology was jointly developed by JFE Engineering and New Energy and Industrial Technology Development Organization (NEDO). As a form of energy conservation technology created in Japan, it was awarded the Prime Minister Prize in 2006 and the Nikkei Global Environment Technology Prize in 2007.

Usage in energy during the air conditioning period (from April to November)



In our company building, due to comprehensive energy conservation measures centering on the installation of the above mentioned CHS Heat Storage Air-conditioning System, we conserved 27% more energy than our average consumption from the year ended March 2002 to the year ended March 2005 compared with before the system was installed. The CHS Heat Storage Air-conditioning System contributed to about 40% of this achievement.

Energy conservation achievement (Cooling period for our company building)

27%
(Compared to period prior to installation)



Kawasaki Azalea (Kawasaki City)



California Steel Industries, Inc. (California, USA)



Kuraray Manufacturing Technology Development Center (Kurashiki City)

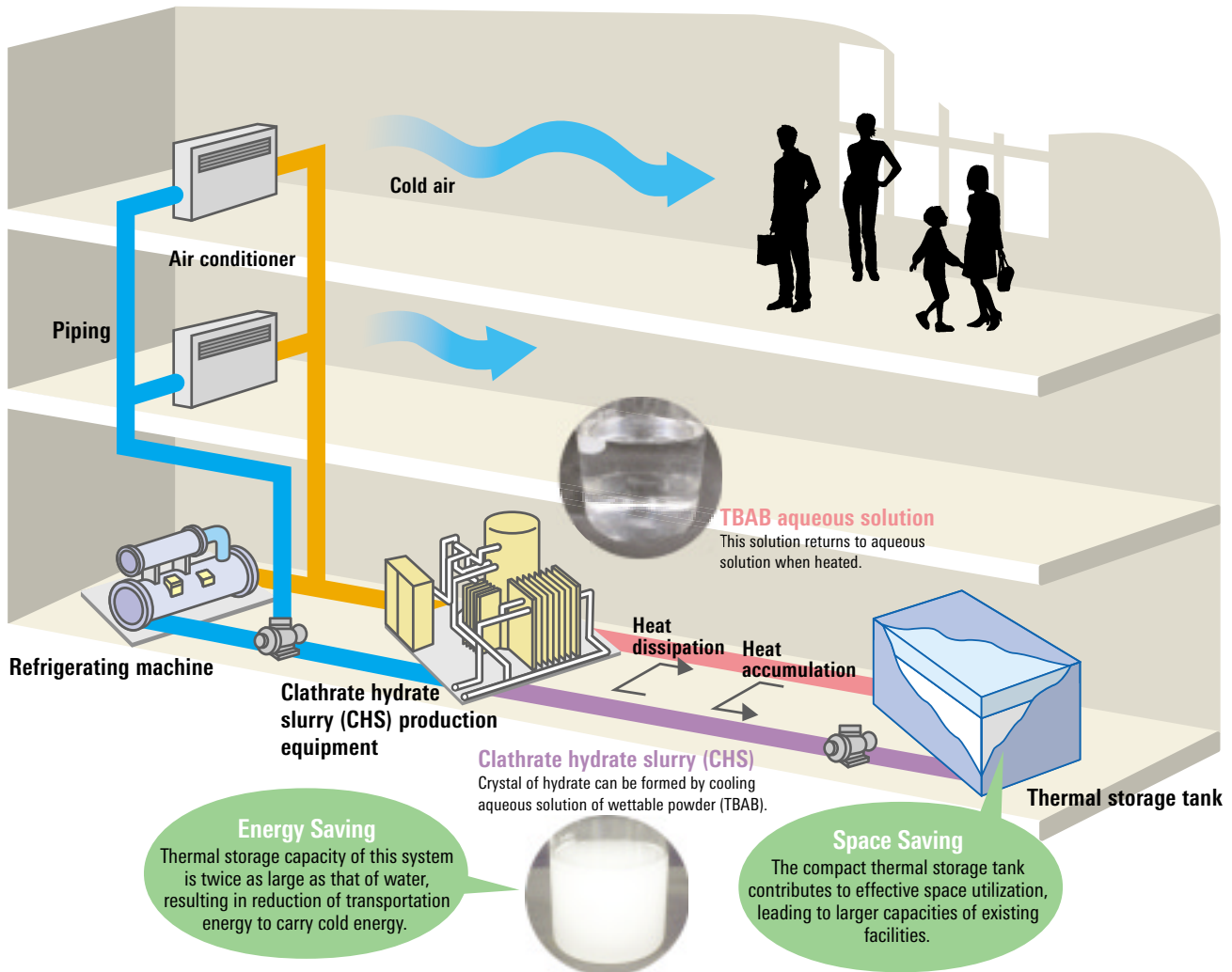
Sewerage Sludge Digestive Gas Power Generation

The high-efficiency engine of this system converts digestive gases, generated from sludge digestion tanks at sewerage treatment plants, into electricity and thermal energy.



Biomass Boiler System

This system uses a circulating fluidized bed boiler to efficiently generate power and supply heat from carbon-neutral biomass. The biomass boiler system has been adopted and used mainly by wood biomass power plants and paper-manufacturing companies and contributes to the reduction of CO₂ emissions.



Recycling Technology Supporting a Sustainable Society

Recycling Fluorescent Tubes

JFE established factories in Yokohama City and Sendai City, and promotes recycling of fluorescent tubes in those two sites.

Fluorescent tubes contain a small amount of mercury for illumination. The fluorescent tube recycling practiced at JFE safely recovers this mercury and also recycles the glass and metallic cap portions as well.

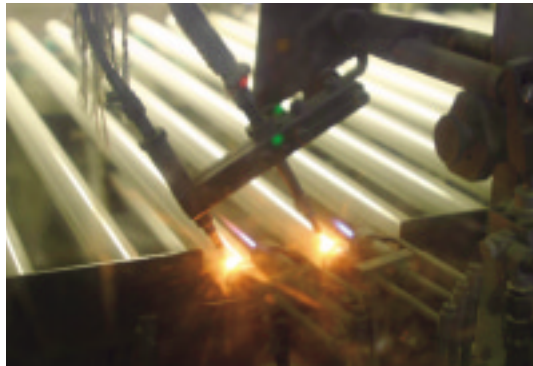
We also pay particular care when carrying fluorescent tubes, using special cargo boxes and cardboard boxes. The fluorescent tubes are sorted by size and shape and fed into a processor. After completely preventing any external leakage of mercury vapor and

fluorescent powder, we take care of cap cutting, fluorescent powder collection, glass crushing, cleaning, and high-purity separation of mercury from collected fluorescent powder (99.9% mercury) in an entirely automatic process.

We developed and made viable the first automatic processor able to handle round tubes as well as straight tubes. The glass tube and cap portion are automatically sorted by material type after crushing and recycled into raw glass, raw metal, and raw plastic. Fluorescent powder, from which the mercury has been removed, is processed with a soil covering and used.

Amount of fluorescent tubes processed (Total tube length is calculated in terms of straight 40W tubes)

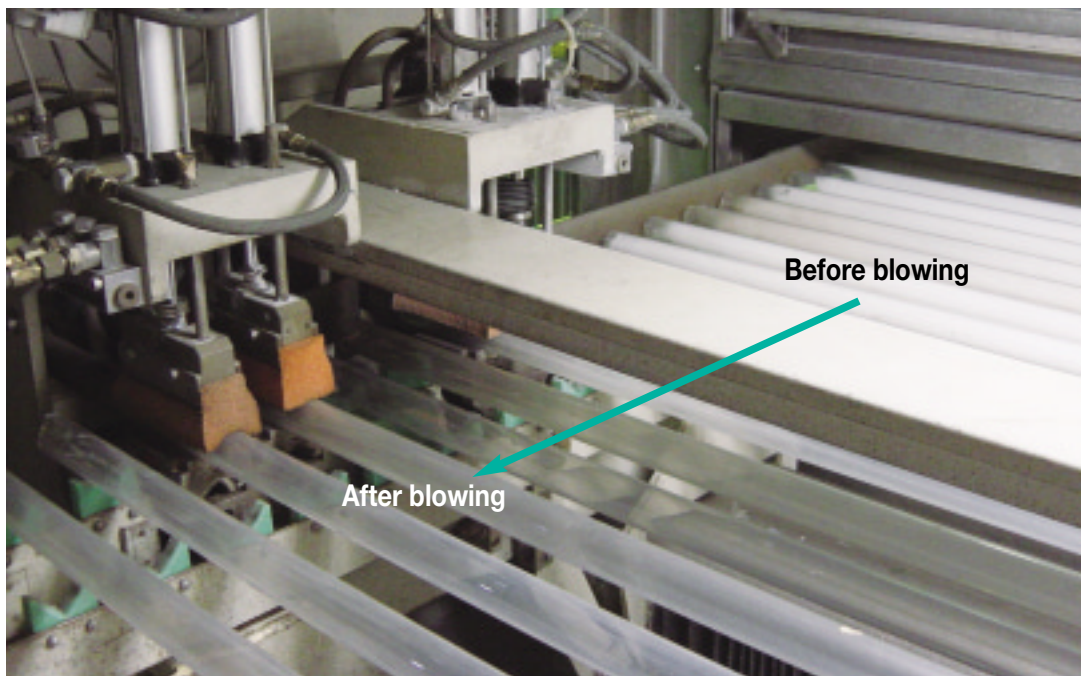
20
million tubes



Automatic cutting of straight tube cap portion



Automatic cutting of round tube cap portion



Air-blow processing

The mercury is sent to a specialist factory in Germany, refined further, and recycled into inorganic chemical products and the like.

The Sendai factory, which began operation in 2006,

boasts cutting-edge equipment. It sports fluorescent lights with unique formats such as liquid crystal back lights, which are becoming increasingly popular.



Collected glass



Collected metal

Recycling Different Kinds of Used Products

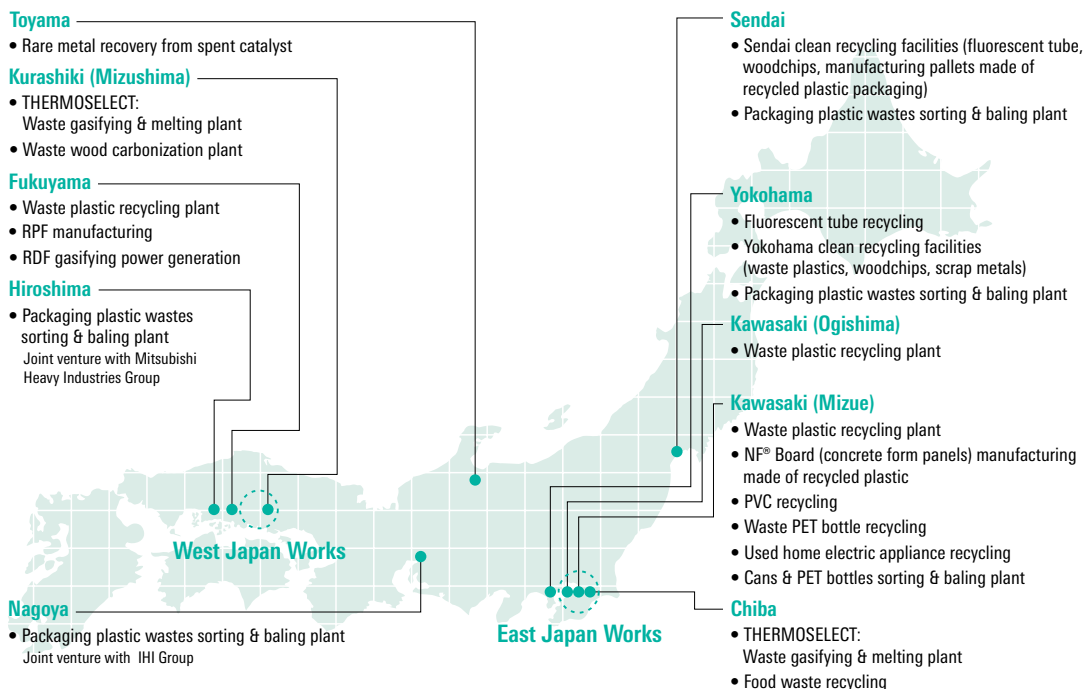
JFE is also involved in recycling various kinds of waste materials. We are playing our part in building a recycling-oriented society by recycling and effectively using a wide variety of used products. Our efforts include converting waste plastics into raw material for

blast furnaces through the sophisticated utilization of our steelworks infrastructure, recycling used home electric appliances and food waste, and manufacturing NF® boards from waste plastics.

Amount processed of the 4 regulated types of discarded home electronic appliances

720
thousand products

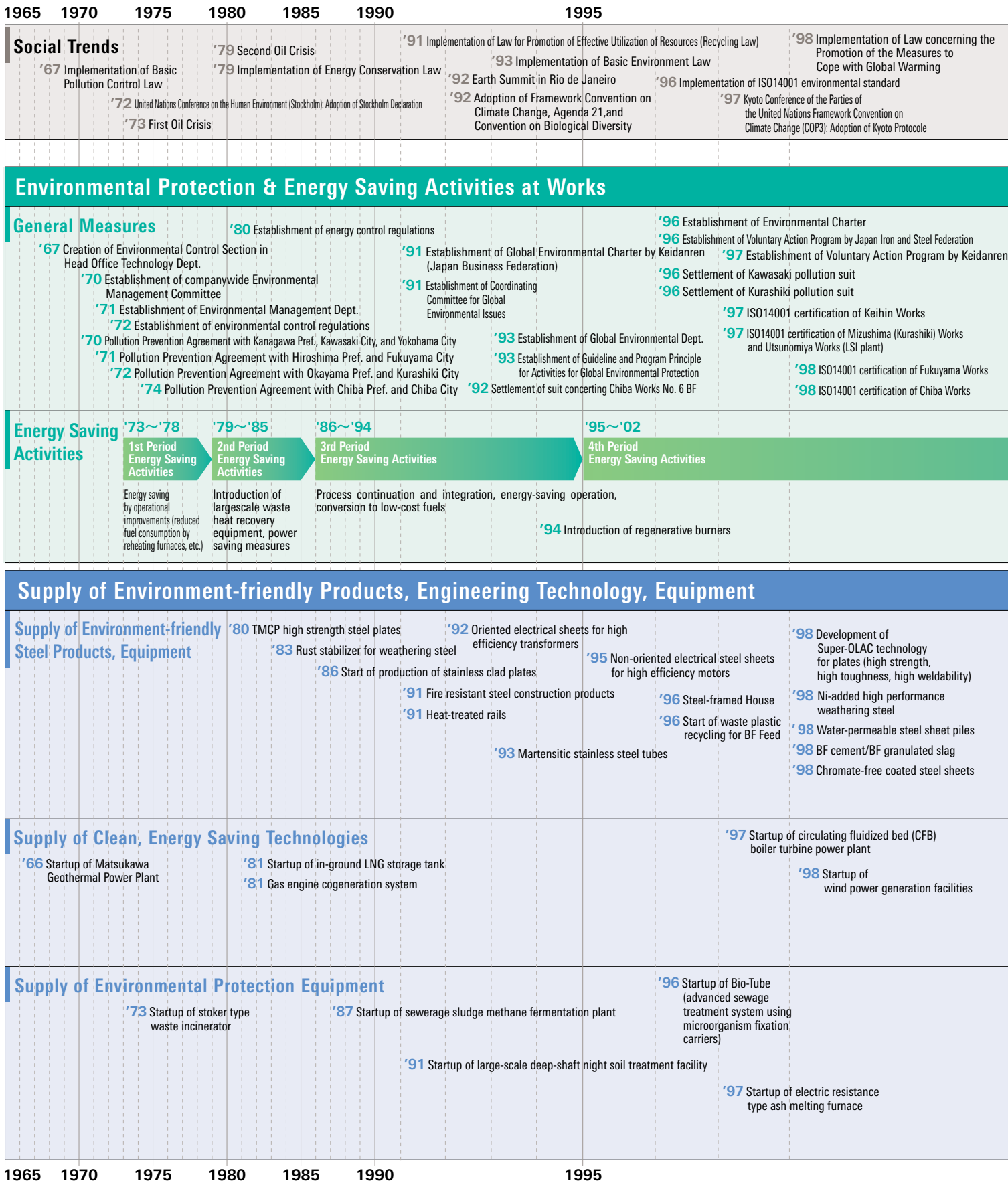
JFE Group's Recycling Businesses



Year ending March 2009: Container and packaging plastic (Other plastics) Amount successfully bid on

84
thousand tons

History of Environmental Measures in JFE Group



2000	2005	2006	2007	2008
<ul style="list-style-type: none"> '99 Implementation of Law concerning Special Measures against Dioxins '99 Implementation of PRTR Law 	<ul style="list-style-type: none"> '00 Implementation/revision of 6 laws related to establishment of recycling-based society '02 Implementation of Soil Contamination Control Law 	<ul style="list-style-type: none"> '05 Effect of Kyoto Protocol '05 Revision of Law Concerning the Promotion of the Measures to Cope with Global Warming 	<ul style="list-style-type: none"> '06 Enforcement of the revised Energy Saving Law 	<ul style="list-style-type: none"> '08 Commencement of First Commitment Period of the Kyoto Protocol
<ul style="list-style-type: none"> '99 ISO14001 certification of Engineering Division '99 ISO14001 certification of Chita Works 	<ul style="list-style-type: none"> '01 Establishment of Environment & Energy Liaison Center '02 Start of JFE Group (September) '03 Start of 5 operating companies (April) '03 Start of Environmental Management Network System 	<ul style="list-style-type: none"> '05 Overhaul of the environmental management system 	<ul style="list-style-type: none"> '06 Startup of environmental abnormality prevention system (Chiba) 	<ul style="list-style-type: none"> '07 Commencement of Environmental Information Publication System (Keihin)
Energy saving for global warming prevention	Thorough effort for global warming prevention			
<ul style="list-style-type: none"> '99 "Tsubasa" screw pile 	<ul style="list-style-type: none"> '00 Development of Super-OLAC technology for shape steel '01 Tailor Welded Blank '01 As-sintered alloy steel powder (heat treatment-free) '01 High-purity silicon for solar cells '01 Lead-free free-cutting bars for machine structural use '02 Development of Super-OLAC technology for high carbon hot-rolled sheets '02 Start of production of NF Board for concrete forms using recycled resin 	<ul style="list-style-type: none"> '03 JFE EWEL '03 Laminated steel sheet for food cans '04 Chromate-free steel sheet JC/JP '04 New alloy steel powder for automotive parts '04 Hat-shaped steel sheet pile 900 '05 Road Cool '05 Fine γ '05 Ultra-high strength plate HITEN (HOP technology) 	<ul style="list-style-type: none"> '06 Highly lubricant GA steel sheet "JAZ[®]" for automobiles '06 Chromate-free steel sheet "Eco-Frontier JM" '06 High heat-resistance stainless steel for exhaust manifolds '06 New press technology "JIM-Form" '06 High formability 1180 MPa grade cold-rolled HITEN '06 JIP Clean Mix HDX 	<ul style="list-style-type: none"> '07 Ultra-high tensile hot-rolled steel sheet "1180MPa, NANO HITEN™" '07 High performance hot-dip galvanized steel sheet "JFE ECOGAL™" '07 Ultra-high strength plate HITEN "JFE-HYD1100LE" '07 High-strength drum can "Eco Feather"
	<ul style="list-style-type: none"> '01 Tie-up for high efficiency fuel cell power generation (SOFC) 	<ul style="list-style-type: none"> '03 Startup of pilot-scale plant for high efficiency fuel cell power generation (SOFC) '03 Startup of BIGADAN process biogas system '03 Order for JFE-Babcock & Wilcox Volund fixed-bed updraft gasifier for wood chips '03 Startup of RDF gasifying power generation plant '04 Startup of clathrate hydrate slurry (CHS) latent heat air-conditioning system 	<ul style="list-style-type: none"> '05 Order for JFE-Babcock & Wilcox Volund wood biomass gas-fired power generation system '06 Startup of refinement process of containers and packaging plastics '06 Completion of wood biomass gas-fired power generation plant '06 Serial orders for wood biomass gas-fired power generation plant '06 Development of large-scale gas engine E3G 	<ul style="list-style-type: none"> '07 Order for wood biomass gas-fired facilities for the manufacturing industry '07 Completion of work on the first order for fuel conversion remodeling of existing diesel electric power facilities
	<ul style="list-style-type: none"> '00 Startup of JFE THERMOSELECT gasifying & melting furnace '00 Startup of U-tube ozone contact equipment '01 Startup of home electric appliance recycling plant '01 Startup of environment-friendly high-efficiency arc furnace (ECOARC) '01 Completion of seawater exchange-type hybrid caisson '02 Startup of high temperature gasifying & direct melting furnace '02 Startup of fly ash dioxin removal equipment High Clean DX 	<ul style="list-style-type: none"> '02 Startup of sewerage sludge circulating fluidized bed incinerator '04 Order for Hyper 21 Stoker System '04 Order for flue gas dioxin removal equipment (Gas-Clean DX) '04 Sales startup of cleaning robot for boiler water tube (Boiler-Clean DX) '04 Sales startup of photocatalyst air purification system 	<ul style="list-style-type: none"> '05 Startup of packaging plastic material recycling plant '06 Order for VOC recovery equipment '06 Sales startup of sewerage sludge inhibition system (Half & Half) '06 Startup of Sendai clean recycling facilities 	
2000	2005	2006	2007	2008

Environmental Businesses Network of JFE Group Companies

Area	Company	Business
Environmental surveys, analysis, and consultation	JFE Net Corporation http://www.jfe-net.co.jp/	Consultation on development of environmental management systems; ISO-based environmental training; seminars for in-house environmental monitoring personnel; internal environmental auditing.
	JFE TECHNO-RESEARCH CORP. http://www.jfe-tec.co.jp/	Environmental and energy-related measurement, surveys, and analysis (air and soil quality, etc.); consultation on environmental issues (Environmental ISO, PPD preparation of overseas CDM, etc.); consigned LCA (life cycle assessment); information collection and surveys on environment-related technologies.
	Japan Technomate Corporation http://www.jtmc Corp.co.jp/	Manufacture of experimental equipment for marine environment remediation technologies; implementation and consultation of hydraulic experiment and numerical simulations, environmental and energy-related measurements, surveys and analysis.
Waste treatment and recycling	JFE URBAN RECYCLE CORP. http://www.urrec.co.jp/	Recycling of the 4 waste home electric appliance items subject to the Home Appliance Recycling Law; recycling of household appliances used in business, OA equipment and vending machines, etc.; collection and transportation of industrial waste.
	JFE KANKYO CORP. http://www.jfe-kankyo.co.jp/	Waste treatment and recycling (waste plastics, wastewater and sludge, fluorescent lamps, batteries, etc.); collection and transportation of wastes; environmental measurement and analysis, environmental measurement certificates; consultation on waste treatment and recycling.
	JFE LOGISTICS CORP. http://www.jfe-logistics.co.jp/	Collection of toner cartridges and fluorescent tubes; land/marine transportation of waste plastics, industrial waste and construction waste soil, etc.; environmental improvement works (such as washing and cleaning); intermediate treatment of industrial waste; construction, operation, repair, dismantling and washing of environmental equipment.
	JFE MINERAL CO., LTD. http://www.jfe-mineral.co.jp/	Manufacture of iron and steel slag products; technological development for effective use of slag; development of high-value-added slag products; recycling businesses (recycling waste concrete/asphalt into concrete/asphalt aggregate, recycling of molding sand); soil and underground water pollution surveys and cleanup work.
	JAPAN RECYCLING CORP. http://www.japan-recycle.co.jp/	Industrial waste treatment; recycling of waste containers and packaging; sale of by-products from waste treatment; operation and maintenance of municipal and industrial waste treatment facilities.
	JFE LIFE CORP. http://www.jfe-life.co.jp/index.html	Collection and transportation of industrial wastes; design, installation, sale, and maintenance of building and industrial air conditioner filter; recovery of chlorofluorocarbon gas from vending machines.
	DAIWA STEEL CORP. http://www.daiwa-steel.com/	Intermediate treatment of wastes (melting of dry batteries, etc., in electric furnace).
Environmental plant and equipment	JFE PRECISION CO., LTD. http://www.jfe-seimitsu.co.jp/	Manufacture, installation, and maintenance of water treatment and waste treatment equipment.
	JFE Soldec Corporation http://www.jfe-soldec.co.jp/	Design of waste treatment equipment; development of planning and operation management support systems for environmental equipment; design of environmental protection systems (combustion exhaust gas); VOC treatment systems; development support for production and use systems related to environment-friendly fuels; energy saving consultation.
	JFE Technos Corporation http://www.jfe-technos.co.jp/	Manufacture, installation, and maintenance of waste treatment equipment and water treatment equipment; experimental fabrication and testing related to research and development (DME diesel engine, countermeasures for dioxins, etc.).
	JFE SHOJI TRADE CORPORATION http://www.jfe-shoji.co.jp/	Overall sales of environmental plants, equipment, commodities, and services; overseas afforestation.
	JFE Environmental Solutions Corporation http://www.jfe-kansol.co.jp/	Maintenance service of environmental plant facilities and machinery.
	GECOSS CORP. http://www.gecoss.co.jp/	GSS method for recycling soil generated from soil-cement continuous wall construction, reducing industrial wastes more than 50% than conventional method.
	JFE ADVANTECH CO., LTD. http://www.jfe-advantech.co.jp/	Manufacture and sale of measuring instruments for waste treatment facilities, sewage system, and waterworks (industrial weighing scale, measuring devices of water level, quality, flow rate, etc.).
JFE ELECTRICAL & CONTROL SYSTEMS, INC. http://www.jfe-densei.co.jp/	Design, installation, and maintenance of electrical systems and instrumentation of waste treatment facilities; design and manufacture of photovoltaic power generation systems; design and installation of energy saving system.	

Area	Company	Business
Environmental plant and equipment	JFE MECHANICAL CORP. http://www.jfe-m.co.jp/	Design, manufacture, installation and comprehensive maintenance of environment-related/recycling equipment and water treatment equipment; manufacture and sale of compact dry distillation type incinerators; dismantling of incinerator using technologies of countermeasures for dioxins.
	JFE Eletech Corporation http://www.jfe-elt.co.jp/	Design and installation of electrical systems and instrumentation of various plants such as water treatment plants and incinerators.
	Tohoku Dock Tekko Co., Ltd. http://business3.plala.or.jp/t-dock/	Design, manufacture, installation, and maintenance of waste treatment equipment design, manufacture and sales of raw garbage treatment plants.
	JFE Environment Service Corporation http://www.jfe-esc.co.jp	Consigned operation of environment-related plants such as waste treatment and water treatment equipment.
	JFE Koken Corporation http://www.jfe-koken.co.jp/	Prevention of soil contamination and restoration of contaminated soil; installation of water treatment equipment; environment-friendly construction methods (such as no-trenching method).
	JFE PIPE FITTING MFG. CO., LTD. http://www.jfe-pf.co.jp/	Design, manufacture, and installation of molding sand recycling equipment (energy saving fluidized calcination furnace etc.).
	NIPPON CHUZO K.K. http://www.nipponchuzo.co.jp/	Manufacture and sale of heat and wear resistant castings for waste incinerators; molding sand recycling equipment, slag comminutor.
	Nippon Chutetsukan K.K. http://www.nichu.co.jp/	Design, manufacture, and turnkey execution of water environment engineering-related projects.
	Recycling Management Japan, Inc.	Operation and maintenance of municipal and industrial waste treatment facilities; production of RDF and compost; design and manufacture of production facilities for RDF and compost fuel.
JFE Mie Tec Service Corporation http://www.jfe-mts.co.jp/	Manufacture, installation, trial run, and maintenance of waste/water treatment equipment.	
General environmental protection	JFE G.S. CORP. http://www.jfe-gs.co.jp/	Collection and transportation of municipal and industrial wastes; operation and maintenance of waste incinerating plants and environment-related facilities; greening and landscape planting; environmental measurement/analysis, measurement certificate of air and water quality; consultation on waste treatment, environmental greening and environmental surveys.
	KEIYO CITY SERVICE CORP. http://www.keiyocity.jp/	Design and construction of gardens and civil works; maintenance of gardens and planted areas; consultation on environmental greening; green plant leasing; washing of waste collection containers; washing and leasing of restaurant kitchen filter.
	JFE West Technology Co., Ltd. http://www.jfe-fst.co.jp/	Collection and transportation of municipal wastes.
	FUKUYAMA GENERAL SERVICE CO., LTD. http://www.jfe-fgs.co.jp/index.html	Greening; cleanup service; environment-related measurement.
	MINAMIAICHI TOWN SERVICE CORP. http://www13.ocn.ne.jp/%7Emats/	Design and construction of gardens and civil works; maintenance of gardens and planted areas; consultation on environmental greening; green plant leasing; recycling of vending machines.
Environment-friendly products	JFE CHEMICAL CORP. http://www.jfe-chem.com/	Plastic recycling; gas refining and byproducts recovery; carbon dioxide gas recovery and reuse; water treatment chemicals (iron, hydrated lime, etc.).
	JFE METAL PRODUCTS & ENGINEERING INC. http://www.jfe-kenzai.co.jp/	Development and manufacture of construction/civil engineering products with low environmental loads, and environment cleanup-type building materials (guardrail and sound insulating wall using photocatalyst).
	JFE GALVANIZING AND COATING CO., LTD. http://www.jfe-kouhan.co.jp/	Environment-friendly coated steel products (manufacture of raindrop-stain resistant prepainted steel sheet for roofing/siding/sound insulating, heat insulating prepainted steel sheet, and acid resistant prepainted steel sheet; manufacture and construction work of metal roofing materials and siding materials).
	JFE CIVIL ENGINEERING & CONSTRUCTION CORP. http://www.jfe-civil.com/	Environment-friendly construction method (steep slope road widening method: Metal Road).
	JFE ROCKFIBER CORP. http://www.jfe-rockfiber.co.jp/	Manufacture and sale of rock wool products made mainly from BF slag, contributing to energy saving and better housing environment.
	JFE CONTAINER CO., LTD. http://www.jfecon.jp/	Manufacture and sale of reusable drum cans (Eco-drum, S Open drum can); recovery service of new drum and used drum can.
	CHIBA RIVERMENT AND CEMENT CORP.	Manufacture of slag powder and BF cement (designated item by the Green Procurement Law).
	MIZUSHIMA RIVERMENT CORP.	Manufacture of slag powder and BF cement (designated item by the Green Procurement Law).

Awards Received for Excellence of Environmental Technologies (since 2005)

Okouchi Memorial Prize

2007 Okouchi Memorial Prize

- Development and activation for mass production of the highly functional chromate-free coated steel sheets for household electronics

National Invention Award

2008 Commendation for Invention by the Minister of Education, Culture, Sports, Science and Technology

- Invention of environmentally friendly chromate-free highly functional chemical conversion treated steel sheets

2007 The 21st Century Encouragement of Invention Prize

- Invention of high strength hot-rolled steel sheet using nano-sized deposition

2008 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Development Category)

- Development of highly efficient manufacturing technology for highly pure ferrite stainless steel

Japan Industrial Technology Grand Prix

2006 Prime Minister Prize

- Development and practical application of new air-conditioning system using clathrate hydrate slurry (CHS)

Ichimura Industrial Award

2008 Contribution Award

- Development of SUS304 substrate, Ni & Mo Free, 21% chrome stainless steel

Japan Institute of Metals Award

2007 Technical Development Award

- Hybrid Mo alloy steel powder that actualizes highly durable sinter parts through minimizing pores

2006 Technical Development Award

- High strength and high corrosion resistant stainless oil well steel pipe for the development of deep natural gas fields (UHP15Cr)
- Suppression of oxidation of stainless steel using Laves phase

Excellent Energy Saving Machinery Award

2006 Prize from Director-General, Agency for Natural Resources and Energy

- High performance descaling nozzle

Iwatani Naoji Memorial Foundation

2008 Iwatani Naoji Memorial Award

- Development and practical application of high-strength steel pipes with a high-performance localized buckling function

Nikkei Superior Products and Services Award

2007 Top Superior Award Nikkei Sangyo Shimibun Award for Excellence in Products and Services

- High corrosion resistant stainless "JFE443CT" without any use of nickel and molybdenum

Nihon Keizai Shimibun, Inc. Global Environmental Technology Prize

2007 Nihon Keizai Shimibun, Inc. Global Environmental Technology Prize

- Development of new air-conditioning system using clathrate hydrate slurry (CHS)

Fuji Sankei Business i Advanced Technology Award

2007 Sankei Shimibun Award

- New highly anti-corrosive stainless steel that contributes to resource conservation -21 chrome stainless steel-

Resource Recycling Technology and System Award (Clean Japan Center)

2007 Industrial Technology Environmental Director's Prize from the Ministry of Economy, Trade and Industry

- Establishment of recycling system for fluorescent tubes

The Japan Society for Technology of Plasticity

2008 Best award Aida Technology Award

- Fundamental research into steel bar and plate manufacturing and ultra fine processing of crystalline grain

2007 Aida Technology Encouragement Award

- Development of new bending method (PRB) of high strength and thin wall steel pipe and application to arm part

2006 Best award Aida Technology Award

- High strength and high formability HISTORY steel pipe using warm narrow path rolling

The Japan Institute of Energy

2007 The JIE Award for Progress in Technical Division

- Development of a DMA large diesel engine power generation system

2006 The JIE Award in Technical Division

- Research and development of high temperature air combustion control technology

Japan Boiler Association

2007 Technology Award

- Boiler Tube Cleaning and Inspection Robot for Waste Incinerator

Japan Powder Metallurgy Association

2007 Japan Powder Metallurgy Association Materials Award

- Hybrid Mo alloy steel powder that actualizes highly durable sinter parts

Chugoku Regional Invention Award

2007 Prize from Minister of Education, Culture, Sports, Science and Technology

- Limestone and coke dust external granulation technology
- Technology to improve the toughness of the heat affected zone in super high-heat input welding

2006 Prize from Minister of Education, Culture, Sports, Science and Technology

- Environment-friendly chromate-free high-performance plastic chemical conversion treatment steel sheets

Kanto Regional Invention Award

2006 Encouragement Prize from Japan Patent Office Commissioner

- High strength hot-rolled steel sheet using nano-sized deposition

Shinagawa Greening Award

2005

- Gentry House Shinagawa Ooi

Heat Pump and Thermal Storage Technology Center of Japan Award

2007 Letter of Appreciation

- Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System (Azalea)

Regarding the JFE Group's Social and Environmental Efforts



Yuko Sakita
Journalist and Environmental Counselor

It is now understood that the only solution to global warming is to drastically reduce global CO₂ emissions by the year 2050. In response, people worldwide are demanding the widespread establishment of carbon-reduction practices. I recently read JFE's 2008 Business Report to get a clearer idea of how the Company is reacting to such developments.

In the steel business-the Group's core activity-crude steel production has risen sharply due to increased demand sparked by economic growth throughout Asia. As a result, the Group's overall CO₂ emissions have increased, so I was particularly glad to see that the Message from the CEO clearly states JFE's strong recognition of its responsibilities in this area. While factors such as skyrocketing resource costs continue to exacerbate the situation, I am encouraged by the Company's strategies for sustainable growth, which were formed with economic, social and environmental considerations in mind.

JFE Steel's crude steel production has increased 30% since 1990, but CO₂ emissions have increased only 5%, the result of technological advances that have slashed emissions per unit-of-steel production by 19%. I expect this to contribute to the fight against global warming worldwide, along with other Clean Development Mechanism (CDM) efforts led by technological innovation.

In the shift toward a more environmentally friendly society, support for sustainable regional planning is rising. This includes measures such as locally generated energy through more effective use of resources, such as biomass, which currently are either underutilized or not used at all. It will also be important to encourage business development through regional partnerships.

Greater importance is also being placed on biological diversity. In addition to forest preservation and other large-scale efforts, I would also like to see corporations steadily expand their ground-level efforts in areas such as resource conservation and the greening of worksites. Such initiatives can help corporations strengthen the bonds of trust with their host communities.

I am impressed by the Group's clear stance on corporate social responsibility (CSR). Sparked by the wastewater problem at the East Japan Works Chiba Region, the Company has established committees to oversee compliance and environmental matters, and created an environmental management system encompassing all Group companies. The Company even released negative information about hydraulic testing for weld repaired pipes not having been carried out. I believe that the Group is not satisfied simply by having created an environmental management system, and will remain on alert to new challenges as they arise.



Professor
Yoshinao Kozuma
Faculty of Economics, Sophia University

Clearly, the most important CSR issue for the JFE Group is to reduce greenhouse gas emissions given the leading role played by a steel company in the group's operations. Although JFE Steel Corporation was identified as the top emitter of greenhouse gases in the fiscal year ended March 2007, it should be recognized that steel is an essential material even in a sustainable society, and that the steel industry is, by its nature, obliged to emit greenhouse gases on a massive scale. As such, this industry's efforts in the fight against global warming have been evaluated in terms of emission reduction rate or efficiency so far.

Thanks to JFE Steel's remarkably high technological standards, the company has achieved a 19% reduction in emissions per unit of crude steel production. This world-class achievement is the result of operational efficiency improvements and other energy-saving technologies, including the coke dry quenching (CDQ) method. As greater attention is paid to the Sectoral Approach, there are infinite possibilities to contribute to benefiting global society by taking advantage of such technologies.

The effects of JFE's environmental technologies are equally impressive. Efforts to create technologies aimed at energy and resource conservation, and a cleaner environment, have resulted in JFE443CT stainless steel, solar-cell wafers, ship ballast-water control systems, biomass boilers, and power-generation facilities using sludge and raw garbage. JFE has also created unique environmentally related technologies, such as insect-proof steel sheet that repels cockroaches, steel sheet free of hexavalent chromium for home appliances and, from JFE Life Corporation, hydroponic vegetable growing systems.

Finally, in the realm of socially related activities, the Senior Expert Program is contributing to a higher rate of reemployment, as well as garnering praise for helping to ease the effects of an aging society.

However, it is also true that social trust has been undermined by a series of legal violations relating to gas pipe bid-rigging and steel cartel activities. While JFE Holdings CEO Fumio Sudo stresses the importance of compliance in his corporate address almost every year, more must be done to ensure that the entire organization embraces this awareness, and to ensure that the values of the steel industry and those of society in general are in harmony. In the future, JFE would do well to further strengthen and broaden its in-house compliance education.



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